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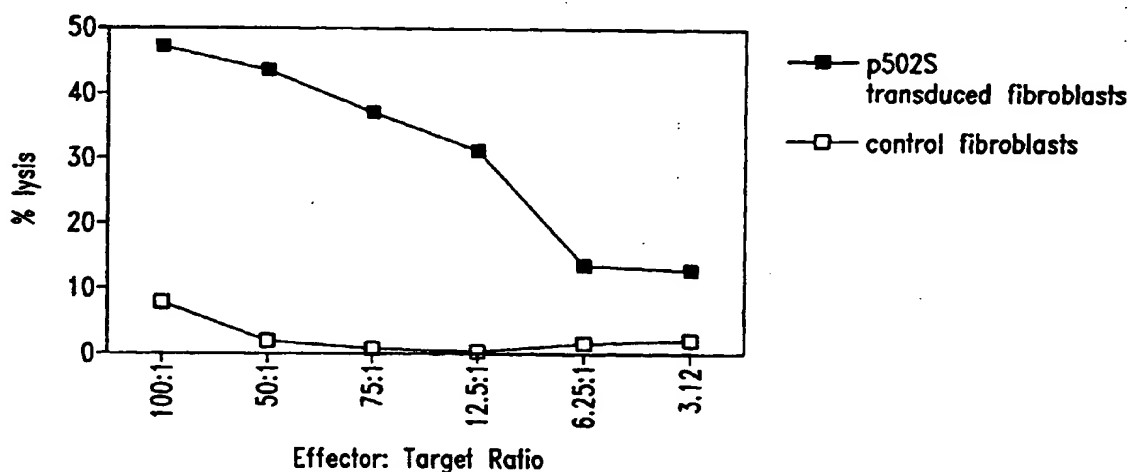
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(54) Title: COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER



(57) Abstract: Compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer, are disclosed. Compositions may comprise one or more prostate tumor proteins, immunogenic portions thereof, or polynucleotides that encode such portions. Alternatively, a therapeutic composition may comprise an antigen presenting cell that expresses a prostate tumor protein, or a T cell that is specific for cells expressing such a protein. Such compositions may be used, for example, for the prevention and treatment of diseases such as prostate cancer. Diagnostic methods based on detecting a prostate tumor protein, or mRNA encoding such a protein, in a sample are also provided.

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COMPOSITIONS AND METHODS FOR THERAPY AND DIAGNOSIS OF PROSTATE CANCER

TECHNICAL FIELD

The present invention relates generally to therapy and diagnosis of cancer, such as prostate cancer. The invention is more specifically related to polypeptides comprising at least a portion of a prostate tumor protein, and to polynucleotides encoding such polypeptides. Such polypeptides and polynucleotides may be used in vaccines and pharmaceutical compositions for prevention and treatment of prostate cancer, and for the diagnosis and monitoring of such cancers.

BACKGROUND OF THE INVENTION

Prostate cancer is the most common form of cancer among males, with an estimated incidence of 30% in men over the age of 50. Overwhelming clinical evidence shows that human prostate cancer has the propensity to metastasize to bone, and the disease appears to progress inevitably from androgen dependent to androgen refractory status, leading to increased patient mortality. This prevalent disease is currently the second leading cause of cancer death among men in the U.S.

In spite of considerable research into therapies for the disease, prostate cancer remains difficult to treat. Commonly, treatment is based on surgery and/or radiation therapy, but these methods are ineffective in a significant percentage of cases. Two previously identified prostate specific proteins - prostate specific antigen (PSA) and prostatic acid phosphatase (PAP) - have limited therapeutic and diagnostic potential. For example, PSA levels do not always correlate well with the presence of prostate cancer, being positive in a percentage of non-prostate cancer cases, including benign prostatic hyperplasia (BPH). Furthermore, PSA measurements correlate with prostate volume, and do not indicate the level of metastasis.

In spite of considerable research into therapies for these and other cancers, prostate cancer remains difficult to diagnose and treat effectively. Accordingly, there is a need in the art for improved methods for detecting and treating

such cancers. The present invention fulfills these needs and further provides other related advantages.

SUMMARY OF THE INVENTION

Briefly stated, the present invention provides compositions and methods for the diagnosis and therapy of cancer, such as prostate cancer. In one aspect, the present invention provides polypeptides comprising at least a portion of a prostate tumor protein, or a variant thereof. Certain portions and other variants are immunogenic, such that the ability of the variant to react with antigen-specific antisera is not substantially diminished. Within certain embodiments, the polypeptide comprises at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of: (a) sequences recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; (b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and (c) complements of any of the sequence of (a) or (b). In certain specific embodiments, such a polypeptide comprises at least a portion, or variant thereof, of a tumor protein that includes an amino acid sequence selected from the group consisting of sequences recited in any one of SEQ ID NO: 112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

The present invention further provides polynucleotides that encode a polypeptide as described above, or a portion thereof (such as a portion encoding at least 15 amino acid residues of a prostate tumor protein), expression vectors comprising such polynucleotides and host cells transformed or transfected with such expression vectors.

Within other aspects, the present invention provides pharmaceutical compositions comprising a polypeptide or polynucleotide as described above and a physiologically acceptable carrier.

Within a related aspect of the present invention, vaccines are provided. Such vaccines comprise a polypeptide or polynucleotide as described above and a non-specific immune response enhancer.

The present invention further provides pharmaceutical compositions that comprise: (a) an antibody or antigen-binding fragment thereof that specifically binds to a prostate tumor protein; and (b) a physiologically acceptable carrier.

Within further aspects, the present invention provides pharmaceutical compositions comprising: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a pharmaceutically acceptable carrier or excipient. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B cells.

Within related aspects, vaccines are provided that comprise: (a) an antigen presenting cell that expresses a polypeptide as described above and (b) a non-specific immune response enhancer.

The present invention further provides, in other aspects, fusion proteins that comprise at least one polypeptide as described above, as well as polynucleotides encoding such fusion proteins.

Within related aspects, pharmaceutical compositions comprising a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a physiologically acceptable carrier are provided.

Vaccines are further provided, within other aspects, that comprise a fusion protein, or a polynucleotide encoding a fusion protein, in combination with a non-specific immune response enhancer.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient a pharmaceutical composition or vaccine as recited above.

The present invention further provides, within other aspects, methods for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the protein from the sample.

Within related aspects, methods are provided for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated as described above.

Methods are further provided, within other aspects, for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of: (i) a polypeptide as described above; (ii) a polynucleotide encoding such a polypeptide; and/or (iii) an antigen presenting cell that expresses such a polypeptide; under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells. Isolated T cell populations comprising T cells prepared as described above are also provided.

Within further aspects, the present invention provides methods for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population as described above.

The present invention further provides methods for inhibiting the development of a cancer in a patient, comprising the steps of: (a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with one or more of: (i) a polypeptide comprising at least an immunogenic portion of a prostate tumor protein; (ii) a polynucleotide encoding such a polypeptide; and (iii) an antigen-presenting cell that expressed such a polypeptide; and (b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient. Proliferated cells may, but need not, be cloned prior to administration to the patient.

Within further aspects, the present invention provides methods for determining the presence or absence of a cancer in a patient, comprising: (a) contacting a biological sample obtained from a patient with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; and (c) comparing the amount of polypeptide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within preferred embodiments, the binding agent is an antibody, more preferably a monoclonal antibody. The cancer may be prostate cancer.

The present invention also provides, within other aspects, methods for monitoring the progression of a cancer in a patient. Such methods comprise the steps of: (a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a polypeptide as recited above; (b) detecting in the sample an amount of polypeptide that binds to the binding agent; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polypeptide detected in step (c) with the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

The present invention further provides, within other aspects, methods for determining the presence or absence of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample a level of a polynucleotide, preferably mRNA, that hybridizes to the oligonucleotide; and (c) comparing the level of polynucleotide that hybridizes to the oligonucleotide with a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient. Within certain embodiments, the amount of mRNA is detected via polymerase chain reaction using, for example, at least one oligonucleotide primer that hybridizes to a polynucleotide encoding a polypeptide as recited above, or a complement of such a polynucleotide. Within other embodiments, the amount of mRNA is detected using a hybridization technique, employing an oligonucleotide probe that hybridizes to a polynucleotide that encodes a polypeptide as recited above, or a complement of such a polynucleotide.

In related aspects, methods are provided for monitoring the progression of a cancer in a patient, comprising the steps of: (a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein; (b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; (c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and (d) comparing the amount of polynucleotide detected in step (c) with the amount

detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

Within further aspects, the present invention provides antibodies, such as monoclonal antibodies, that bind to a polypeptide as described above, as well as diagnostic kits comprising such antibodies. Diagnostic kits comprising one or more oligonucleotide probes or primers as described above are also provided.

These and other aspects of the present invention will become apparent upon reference to the following detailed description and attached drawings. All references disclosed herein are hereby incorporated by reference in their entirety as if each was incorporated individually.

BRIEF DESCRIPTION OF THE DRAWINGS AND SEQUENCE IDENTIFIERS

Figure 1 illustrates the ability of T cells to kill fibroblasts expressing the representative prostate tumor polypeptide P502S, as compared to control fibroblasts. The percentage lysis is shown as a series of effector:target ratios, as indicated.

Figures 2A and 2B illustrate the ability of T cells to recognize cells expressing the representative prostate tumor polypeptide P502S. In each case, the number of γ -interferon spots is shown for different numbers of responders. In Figure 2A, data is presented for fibroblasts pulsed with the P2S-12 peptide, as compared to fibroblasts pulsed with a control E75 peptide. In Figure 2B, data is presented for fibroblasts expressing P502S, as compared to fibroblasts expressing HER-2/*neu*.

Figure 3 represents a peptide competition binding assay showing that the P1S#10 peptide, derived from P501S, binds HLA-A2. Peptide P1S#10 inhibits HLA-A2 restricted presentation of fluM58 peptide to CTL clone D150M58 in TNF release bioassay. D150M58 CTL is specific for the HLA-A2 binding influenza matrix peptide fluM58.

Figure 4 illustrates the ability of T cell lines generated from P1S#10 immunized mice to specifically lyse P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat A2Kb targets, as compared to EGFP-transduced Jurkat A2Kb. The percent lysis is shown as a series of effector to target ratios, as indicated.

Figure 5 illustrates the ability of a T cell clone to recognize and specifically lyse Jurkat A2Kb cells expressing the representative prostate tumor polypeptide P501S, thereby demonstrating that the P1S#10 peptide may be a naturally processed epitope of the P501S polypeptide.

Figures 6A and 6B are graphs illustrating the specificity of a CD8⁺ cell line (3A-1) for a representative prostate tumor antigen (P501S). Figure 6A shows the results of a ⁵¹Cr release assay. The percent specific lysis is shown as a series of effector:target ratios, as indicated. Figure 6B shows the production of interferon-gamma by 3A-1 cells stimulated with autologous B-LCL transduced with P501S, at varying effector:target ratios as indicated.

SEQ ID NO: 1 is the determined cDNA sequence for F1-13

SEQ ID NO: 2 is the determined 3' cDNA sequence for F1-12

SEQ ID NO: 3 is the determined 5' cDNA sequence for F1-12

SEQ ID NO: 4 is the determined 3' cDNA sequence for F1-16

SEQ ID NO: 5 is the determined 3' cDNA sequence for H1-1

SEQ ID NO: 6 is the determined 3' cDNA sequence for H1-9

SEQ ID NO: 7 is the determined 3' cDNA sequence for H1-4

SEQ ID NO: 8 is the determined 3' cDNA sequence for J1-17

SEQ ID NO: 9 is the determined 5' cDNA sequence for J1-17

SEQ ID NO: 10 is the determined 3' cDNA sequence for L1-12

SEQ ID NO: 11 is the determined 5' cDNA sequence for L1-12

SEQ ID NO: 12 is the determined 3' cDNA sequence for N1-1862

SEQ ID NO: 13 is the determined 5' cDNA sequence for N1-1862

SEQ ID NO: 14 is the determined 3' cDNA sequence for J1-13

SEQ ID NO: 15 is the determined 5' cDNA sequence for J1-13

SEQ ID NO: 16 is the determined 3' cDNA sequence for J1-19

SEQ ID NO: 17 is the determined 5' cDNA sequence for J1-19

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SEQ ID NO: 108 is the predicted amino acid sequence for F1-12
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SEQ ID NO: 250 is the determined cDNA sequence for JPTPN76
SEQ ID NO: 251 is the determined cDNA sequence for JPTPN84
SEQ ID NO: 252 is the determined cDNA sequence for JPTPN85
SEQ ID NO: 253 is the determined cDNA sequence for JPTPN86
SEQ ID NO: 254 is the determined cDNA sequence for JPTPN87
SEQ ID NO: 255 is the determined cDNA sequence for JPTPN88
SEQ ID NO: 256 is the determined cDNA sequence for JP1F1
SEQ ID NO: 257 is the determined cDNA sequence for JP1F2
SEQ ID NO: 258 is the determined cDNA sequence for JP1C2

SEQ ID NO: 259 is the determined cDNA sequence for JP1B1
SEQ ID NO: 260 is the determined cDNA sequence for JP1B2
SEQ ID NO: 261 is the determined cDNA sequence for JP1D3
SEQ ID NO: 262 is the determined cDNA sequence for JP1A4
SEQ ID NO: 263 is the determined cDNA sequence for JP1F5
SEQ ID NO: 264 is the determined cDNA sequence for JP1E6
SEQ ID NO: 265 is the determined cDNA sequence for JP1D6
SEQ ID NO: 266 is the determined cDNA sequence for JP1B5
SEQ ID NO: 267 is the determined cDNA sequence for JP1A6
SEQ ID NO: 268 is the determined cDNA sequence for JP1E8
SEQ ID NO: 269 is the determined cDNA sequence for JP1D7
SEQ ID NO: 270 is the determined cDNA sequence for JP1D9
SEQ ID NO: 271 is the determined cDNA sequence for JP1C10
SEQ ID NO: 272 is the determined cDNA sequence for JP1A9
SEQ ID NO: 273 is the determined cDNA sequence for JP1F12
SEQ ID NO: 274 is the determined cDNA sequence for JP1E12
SEQ ID NO: 275 is the determined cDNA sequence for JP1D11
SEQ ID NO: 276 is the determined cDNA sequence for JP1C11
SEQ ID NO: 277 is the determined cDNA sequence for JP1C12
SEQ ID NO: 278 is the determined cDNA sequence for JP1B12
SEQ ID NO: 279 is the determined cDNA sequence for JP1A12
SEQ ID NO: 280 is the determined cDNA sequence for JP8G2
SEQ ID NO: 281 is the determined cDNA sequence for JP8H1
SEQ ID NO: 282 is the determined cDNA sequence for JP8H2
SEQ ID NO: 283 is the determined cDNA sequence for JP8A3
SEQ ID NO: 284 is the determined cDNA sequence for JP8A4
SEQ ID NO: 285 is the determined cDNA sequence for JP8C3
SEQ ID NO: 286 is the determined cDNA sequence for JP8G4
SEQ ID NO: 287 is the determined cDNA sequence for JP8B6
SEQ ID NO: 288 is the determined cDNA sequence for JP8D6

SEQ ID NO: 289 is the determined cDNA sequence for JP8F5
SEQ ID NO: 290 is the determined cDNA sequence for JP8A8
SEQ ID NO: 291 is the determined cDNA sequence for JP8C7
SEQ ID NO: 292 is the determined cDNA sequence for JP8D7
SEQ ID NO: 293 is the determined cDNA sequence for P8D8
SEQ ID NO: 294 is the determined cDNA sequence for JP8E7
SEQ ID NO: 295 is the determined cDNA sequence for JP8F8
SEQ ID NO: 296 is the determined cDNA sequence for JP8G8
SEQ ID NO: 297 is the determined cDNA sequence for JP8B10
SEQ ID NO: 298 is the determined cDNA sequence for JP8C10
SEQ ID NO: 299 is the determined cDNA sequence for JP8E9
SEQ ID NO: 300 is the determined cDNA sequence for JP8E10
SEQ ID NO: 301 is the determined cDNA sequence for JP8F9
SEQ ID NO: 302 is the determined cDNA sequence for JP8H9
SEQ ID NO: 303 is the determined cDNA sequence for JP8C12
SEQ ID NO: 304 is the determined cDNA sequence for JP8E11
SEQ ID NO: 305 is the determined cDNA sequence for JP8E12
SEQ ID NO: 306 is the amino acid sequence for the peptide PS2#12
SEQ ID NO: 307 is the determined cDNA sequence for P711P
SEQ ID NO: 308 is the determined cDNA sequence for P712P
SEQ ID NO: 309 is the determined cDNA sequence for CLONE23
SEQ ID NO: 310 is the determined cDNA sequence for P774P
SEQ ID NO: 311 is the determined cDNA sequence for P775P
SEQ ID NO: 312 is the determined cDNA sequence for P715P
SEQ ID NO: 313 is the determined cDNA sequence for P710P
SEQ ID NO: 314 is the determined cDNA sequence for P767P
SEQ ID NO: 315 is the determined cDNA sequence for P768P
SEQ ID NO: 316-325 are the determined cDNA sequences of previously isolated genes
SEQ ID NO: 326 is the determined cDNA sequence for P703PDE5
SEQ ID NO: 327 is the predicted amino acid sequence for P703PDE5

SEQ ID NO: 328 is the determined cDNA sequence for P703P6.26

SEQ ID NO: 329 is the predicted amino acid sequence for P703P6.26

SEQ ID NO: 330 is the determined cDNA sequence for P703PX-23

SEQ ID NO: 331 is the predicted amino acid sequence for P703PX-23

SEQ ID NO: 332 is the determined full length cDNA sequence for P509S

SEQ ID NO: 333 is the determined extended cDNA sequence for P707P (also referred to as 11-C9)

SEQ ID NO: 334 is the determined cDNA sequence for P714P

SEQ ID NO: 335 is the determined cDNA sequence for P705P (also referred to as 9-F3)

SEQ ID NO: 336 is the predicted amino acid sequence for P705P

SEQ ID NO: 337 is the amino acid sequence of the peptide P1S#10

SEQ ID NO: 338 is the amino acid sequence of the peptide p5

SEQ ID NO: 339 is the predicted amino acid sequence of P509S

SEQ ID NO: 340 is the determined cDNA sequence for P778P

SEQ ID NO: 341 is the determined cDNA sequence for P786P

SEQ ID NO: 342 is the determined cDNA sequence for P789P

SEQ ID NO: 343 is the determined cDNA sequence for a clone showing homology to Homo sapiens MM46 mRNA

SEQ ID NO: 344 is the determined cDNA sequence for a clone showing homology to Homo sapiens TNF-alpha stimulated ABC protein (ABC50) mRNA

SEQ ID NO: 345 is the determined cDNA sequence for a clone showing homology to Homo sapiens mRNA for E-cadherin

SEQ ID NO: 346 is the determined cDNA sequence for a clone showing homology to Human nuclear-encoded mitochondrial serine hydroxymethyltransferase (SHMT)

SEQ ID NO: 347 is the determined cDNA sequence for a clone showing homology to Homo sapiens natural resistance-associated macrophage protein2 (NRAMP2)

SEQ ID NO: 348 is the determined cDNA sequence for a clone showing homology to Homo sapiens phosphoglucomutase-related protein (PGMRP)

SEQ ID NO: 349 is the determined cDNA sequence for a clone showing homology to Human mRNA for proteosome subunit p40

SEQ ID NO: 350 is the determined cDNA sequence for P777P

SEQ ID NO: 351 is the determined cDNA sequence for P779P

SEQ ID NO: 352 is the determined cDNA sequence for P790P

SEQ ID NO: 353 is the determined cDNA sequence for P784P

SEQ ID NO: 354 is the determined cDNA sequence for P776P

SEQ ID NO: 355 is the determined cDNA sequence for P780P

SEQ ID NO: 356 is the determined cDNA sequence for P544S

SEQ ID NO: 357 is the determined cDNA sequence for P745S

SEQ ID NO: 358 is the determined cDNA sequence for P782P

SEQ ID NO: 359 is the determined cDNA sequence for P783P

SEQ ID NO: 360 is the determined cDNA sequence for unknown 17984

SEQ ID NO: 361 is the determined cDNA sequence for P787P

SEQ ID NO: 362 is the determined cDNA sequence for P788P

SEQ ID NO: 363 is the determined cDNA sequence for unknown 17994

SEQ ID NO: 364 is the determined cDNA sequence for P781P

SEQ ID NO: 365 is the determined cDNA sequence for P785P

SEQ ID NO: 366-375 are the determined cDNA sequences for splice variants of B305D.

SEQ ID NO: 376 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 366.

SEQ ID NO: 377 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 372.

SEQ ID NO: 378 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 373.

SEQ ID NO: 379 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 374.

SEQ ID NO: 380 is the predicted amino acid sequence encoded by the sequence of SEQ ID NO: 375.

SEQ ID NO: 381 is the determined cDNA sequence for B716P.
SEQ ID NO: 382 is the determined full-length cDNA sequence for P711P.
SEQ ID NO: 383 is the predicted amino acid sequence for P711P.
SEQ ID NO: 384 is the cDNA sequence for P1000C.
SEQ ID NO: 385 is the cDNA sequence for CGI-82.
SEQ ID NO: 386 is the cDNA sequence for 23320.
SEQ ID NO: 387 is the cDNA sequence for CGI-69.
SEQ ID NO: 388 is the cDNA sequence for L-iditol-2-dehydrogenase.
SEQ ID NO: 389 is the cDNA sequence for 23379.
SEQ ID NO: 390 is the cDNA sequence for 23381.
SEQ ID NO: 391 is the cDNA sequence for KIAA0122.
SEQ ID NO: 392 is the cDNA sequence for 23399.
SEQ ID NO: 393 is the cDNA sequence for a previously identified gene.
SEQ ID NO: 394 is the cDNA sequence for HCLBP.
SEQ ID NO: 395 is the cDNA sequence for transglutaminase.
SEQ ID NO: 396 is the cDNA sequence for a previously identified gene.
SEQ ID NO: 397 is the cDNA sequence for PAP.
SEQ ID NO: 398 is the cDNA sequence for Ets transcription factor PDEF.
SEQ ID NO: 399 is the cDNA sequence for hTGR.
SEQ ID NO: 400 is the cDNA sequence for KIAA0295.
SEQ ID NO: 401 is the cDNA sequence for 22545.
SEQ ID NO: 402 is the cDNA sequence for 22547.
SEQ ID NO: 403 is the cDNA sequence for 22548.
SEQ ID NO: 404 is the cDNA sequence for 22550.
SEQ ID NO: 405 is the cDNA sequence for 22551.
SEQ ID NO: 406 is the cDNA sequence for 22552.
SEQ ID NO: 407 is the cDNA sequence for 22553.
SEQ ID NO: 408 is the cDNA sequence for 22558.
SEQ ID NO: 409 is the cDNA sequence for 22562.
SEQ ID NO: 410 is the cDNA sequence for 22565.

SEQ ID NO:411 is the cDNA sequence for 22567.
SEQ ID NO:412 is the cDNA sequence for 22568.
SEQ ID NO:413 is the cDNA sequence for 22570.
SEQ ID NO:414 is the cDNA sequence for 22571.
SEQ ID NO:415 is the cDNA sequence for 22572.
SEQ ID NO:416 is the cDNA sequence for 22573.
SEQ ID NO:417 is the cDNA sequence for 22573.
SEQ ID NO:418 is the cDNA sequence for 22575.
SEQ ID NO:419 is the cDNA sequence for 22580.
SEQ ID NO:420 is the cDNA sequence for 22581.
SEQ ID NO:421 is the cDNA sequence for 22582.
SEQ ID NO:422 is the cDNA sequence for 22583.
SEQ ID NO:423 is the cDNA sequence for 22584.
SEQ ID NO:424 is the cDNA sequence for 22585.
SEQ ID NO:425 is the cDNA sequence for 22586.
SEQ ID NO:426 is the cDNA sequence for 22587.
SEQ ID NO:427 is the cDNA sequence for 22588.
SEQ ID NO:428 is the cDNA sequence for 22589.
SEQ ID NO:429 is the cDNA sequence for 22590.
SEQ ID NO:430 is the cDNA sequence for 22591.
SEQ ID NO:431 is the cDNA sequence for 22592.
SEQ ID NO:432 is the cDNA sequence for 22593.
SEQ ID NO:433 is the cDNA sequence for 22594.
SEQ ID NO:434 is the cDNA sequence for 22595.
SEQ ID NO:435 is the cDNA sequence for 22596.
SEQ ID NO:436 is the cDNA sequence for 22847.
SEQ ID NO:437 is the cDNA sequence for 22848.
SEQ ID NO:438 is the cDNA sequence for 22849.
SEQ ID NO:439 is the cDNA sequence for 22851.
SEQ ID NO:440 is the cDNA sequence for 22852.

SEQ ID NO:441 is the cDNA sequence for 22853.
SEQ ID NO:442 is the cDNA sequence for 22854.
SEQ ID NO:443 is the cDNA sequence for 22855.
SEQ ID NO:444 is the cDNA sequence for 22856.
SEQ ID NO:445 is the cDNA sequence for 22857.
SEQ ID NO:446 is the cDNA sequence for 23601.
SEQ ID NO:447 is the cDNA sequence for 23602.
SEQ ID NO:448 is the cDNA sequence for 23605.
SEQ ID NO:449 is the cDNA sequence for 23606.
SEQ ID NO:450 is the cDNA sequence for 23612.
SEQ ID NO:451 is the cDNA sequence for 23614.
SEQ ID NO:452 is the cDNA sequence for 23618.
SEQ ID NO:453 is the cDNA sequence for 23622.
SEQ ID NO:454 is the cDNA sequence for folate hydrolase.
SEQ ID NO:455 is the cDNA sequence for LIM protein.
SEQ ID NO:456 is the cDNA sequence for a known gene.
SEQ ID NO:457 is the cDNA sequence for a known gene.
SEQ ID NO:458 is the cDNA sequence for a previously identified gene.
SEQ ID NO:459 is the cDNA sequence for 23045.
SEQ ID NO:460 is the cDNA sequence for 23032.
SEQ ID NO:461 is the cDNA sequence for 23054.
SEQ ID NOs:462-467 are cDNA sequences for known genes.
SEQ ID NOs:468-471 are cDNA sequences for P710P.
SEQ ID NO:472 is a cDNA sequence for P1001C.
SEQ ID NO:473 is the amino acid sequence for PSMA.
SEQ ID NO:474 is the amino acid sequence for PAP.
SEQ ID NO:475 is the amino acid sequence for PSA.
SEQ ID NO:476 is the amino acid sequence for a fusion protein containing PSA, P703P and P501S.

DETAILED DESCRIPTION OF THE INVENTION

As noted above, the present invention is generally directed to compositions and methods for the therapy and diagnosis of cancer, such as prostate cancer. The compositions described herein may include prostate tumor polypeptides, polynucleotides encoding such polypeptides, binding agents such as antibodies, antigen presenting cells (APCs) and/or immune system cells (*e.g.*, T cells). Polypeptides of the present invention generally comprise at least a portion (such as an immunogenic portion) of a prostate tumor protein or a variant thereof. A "prostate tumor protein" is a protein that is expressed in prostate tumor cells at a level that is at least two fold, and preferably at least five fold, greater than the level of expression in a normal tissue, as determined using a representative assay provided herein. Certain prostate tumor proteins are tumor proteins that react detectably (within an immunoassay, such as an ELISA or Western blot) with antisera of a patient afflicted with prostate cancer. Polynucleotides of the subject invention generally comprise a DNA or RNA sequence that encodes all or a portion of such a polypeptide, or that is complementary to such a sequence. Antibodies are generally immune system proteins, or antigen-binding fragments thereof, that are capable of binding to a polypeptide as described above. Antigen presenting cells include dendritic cells, macrophages, monocytes, fibroblasts and B-cells that express a polypeptide as described above. T cells that may be employed within such compositions are generally T cells that are specific for a polypeptide as described above.

The present invention is based on the discovery of human prostate tumor proteins. Sequences of polynucleotides encoding certain tumor proteins, or portions thereof, are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Sequences of polypeptides comprising at least a portion of a tumor protein are provided in SEQ ID NOs:112-114, 172, 176, 178, 327, 329, 331, 336, 339, 376-380 and 383.

PROSTATE TUMOR PROTEIN POLYNUCLEOTIDES

Any polynucleotide that encodes a prostate tumor protein or a portion or other variant thereof as described herein is encompassed by the present invention. Preferred polynucleotides comprise at least 15 consecutive nucleotides, preferably at least 30 consecutive nucleotides and more preferably at least 45 consecutive nucleotides, that encode a portion of a prostate tumor protein. More preferably, a polynucleotide encodes an immunogenic portion of a prostate tumor protein. Polynucleotides complementary to any such sequences are also encompassed by the present invention. Polynucleotides may be single-stranded (coding or antisense) or double-stranded, and may be DNA (genomic, cDNA or synthetic) or RNA molecules. RNA molecules include HnRNA molecules, which contain introns and correspond to a DNA molecule in a one-to-one manner, and mRNA molecules, which do not contain introns. Additional coding or non-coding sequences may, but need not, be present within a polynucleotide of the present invention, and a polynucleotide may, but need not, be linked to other molecules and/or support materials.

Polynucleotides may comprise a native sequence (*i.e.*, an endogenous sequence that encodes a prostate tumor protein or a portion thereof) or may comprise a variant of such a sequence. Polynucleotide variants may contain one or more substitutions, additions, deletions and/or insertions such that the immunogenicity of the encoded polypeptide is not diminished, relative to a native tumor protein. The effect on the immunogenicity of the encoded polypeptide may generally be assessed as described herein. Variants preferably exhibit at least about 70% identity, more preferably at least about 80% identity and most preferably at least about 90% identity to a polynucleotide sequence that encodes a native prostate tumor protein or a portion thereof.

Two polynucleotide or polypeptide sequences are said to be "identical" if the sequence of nucleotides or amino acids in the two sequences is the same when aligned for maximum correspondence as described below. Comparisons between two sequences are typically performed by comparing the sequences over a comparison window to identify and compare local regions of sequence similarity. A "comparison window" as used herein, refers to a segment of at least about 20 contiguous positions,

usually 30 to about 75, 40 to about 50, in which a sequence may be compared to a reference sequence of the same number of contiguous positions after the two sequences are optimally aligned.

Optimal alignment of sequences for comparison may be conducted using the Megalign program in the Lasergene suite of bioinformatics software (DNASTAR, Inc., Madison, WI), using default parameters. This program embodies several alignment schemes described in the following references: Dayhoff, M.O. (1978) A model of evolutionary change in proteins – Matrices for detecting distant relationships. In Dayhoff, M.O. (ed.) *Atlas of Protein Sequence and Structure*, National Biomedical Research Foundation, Washington DC Vol. 5, Suppl. 3, pp. 345-358; Hein J. (1990) Unified Approach to Alignment and Phylogenies pp. 626-645 *Methods in Enzymology* vol. 183, Academic Press, Inc., San Diego, CA; Higgins, D.G. and Sharp, P.M. (1989) *CABIOS* 5:151-153; Myers, E.W. and Muller W. (1988) *CABIOS* 4:11-17; Robinson, E.D. (1971) *Comb. Theor* 11:105; Santou, N. Nes, M. (1987) *Mol. Biol. Evol.* 4:406-425; Sneath, P.H.A. and Sokal, R.R. (1973) *Numerical Taxonomy – the Principles and Practice of Numerical Taxonomy*, Freeman Press, San Francisco, CA; Wilbur, W.J. and Lipman, D.J. (1983) *Proc. Natl. Acad., Sci. USA* 80:726-730.

Preferably, the “percentage of sequence identity” is determined by comparing two optimally aligned sequences over a window of comparison of at least 20 positions, wherein the portion of the polynucleotide or polypeptide sequence in the comparison window may comprise additions or deletions (*i.e.*, gaps) of 20 percent or less, usually 5 to 15 percent, or 10 to 12 percent, as compared to the reference sequences (which does not comprise additions or deletions) for optimal alignment of the two sequences. The percentage is calculated by determining the number of positions at which the identical nucleic acid bases or amino acid residue occurs in both sequences to yield the number of matched positions, dividing the number of matched positions by the total number of positions in the reference sequence (*i.e.*, the window size) and multiplying the results by 100 to yield the percentage of sequence identity.

Variants may also, or alternatively, be substantially homologous to a native gene, or a portion or complement thereof. Such polynucleotide variants are

capable of hybridizing under moderately stringent conditions to a naturally occurring DNA sequence encoding a native prostate tumor protein (or a complementary sequence). Suitable moderately stringent conditions include prewashing in a solution of 5 X SSC, 0.5% SDS, 1.0 mM EDTA (pH 8.0); hybridizing at 50°C-65°C, 5 X SSC, overnight; followed by washing twice at 65°C for 20 minutes with each of 2X, 0.5X and 0.2X SSC containing 0.1% SDS.

It will be appreciated by those of ordinary skill in the art that, as a result of the degeneracy of the genetic code, there are many nucleotide sequences that encode a polypeptide as described herein. Some of these polynucleotides bear minimal homology to the nucleotide sequence of any native gene. Nonetheless, polynucleotides that vary due to differences in codon usage are specifically contemplated by the present invention. Further, alleles of the genes comprising the polynucleotide sequences provided herein are within the scope of the present invention. Alleles are endogenous genes that are altered as a result of one or more mutations, such as deletions, additions and/or substitutions of nucleotides. The resulting mRNA and protein may, but need not, have an altered structure or function. Alleles may be identified using standard techniques (such as hybridization, amplification and/or database sequence comparison).

Polynucleotides may be prepared using any of a variety of techniques. For example, a polynucleotide may be identified, as described in more detail below, by screening a microarray of cDNAs for tumor-associated expression (*i.e.*, expression that is at least five fold greater in a prostate tumor than in normal tissue, as determined using a representative assay provided herein). Such screens may be performed using a Synteni microarray (Palo Alto, CA) according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Alternatively, polypeptides may be amplified from cDNA prepared from cells expressing the proteins described herein, such as prostate tumor cells. Such polynucleotides may be amplified via polymerase chain reaction (PCR). For this approach, sequence-specific primers may be designed based on the sequences provided herein, and may be purchased or synthesized.

An amplified portion may be used to isolate a full length gene from a suitable library (e.g., a prostate tumor cDNA library) using well known techniques. Within such techniques, a library (cDNA or genomic) is screened using one or more polynucleotide probes or primers suitable for amplification. Preferably, a library is size-selected to include larger molecules. Random primed libraries may also be preferred for identifying 5' and upstream regions of genes. Genomic libraries are preferred for obtaining introns and extending 5' sequences.

For hybridization techniques, a partial sequence may be labeled (e.g., by nick-translation or end-labeling with ^{32}P) using well known techniques. A bacterial or bacteriophage library is then screened by hybridizing filters containing denatured bacterial colonies (or lawns containing phage plaques) with the labeled probe (see Sambrook et al., *Molecular Cloning: A Laboratory Manual*, Cold Spring Harbor Laboratories, Cold Spring Harbor, NY, 1989). Hybridizing colonies or plaques are selected and expanded, and the DNA is isolated for further analysis. cDNA clones may be analyzed to determine the amount of additional sequence by, for example, PCR using a primer from the partial sequence and a primer from the vector. Restriction maps and partial sequences may be generated to identify one or more overlapping clones. The complete sequence may then be determined using standard techniques, which may involve generating a series of deletion clones. The resulting overlapping sequences are then assembled into a single contiguous sequence. A full length cDNA molecule can be generated by ligating suitable fragments, using well known techniques.

Alternatively, there are numerous amplification techniques for obtaining a full length coding sequence from a partial cDNA sequence. Within such techniques, amplification is generally performed via PCR. Any of a variety of commercially available kits may be used to perform the amplification step. Primers may be designed using, for example, software well known in the art. Primers are preferably 22-30 nucleotides in length, have a GC content of at least 50% and anneal to the target sequence at temperatures of about 68°C to 72°C. The amplified region may be sequenced as described above, and overlapping sequences assembled into a contiguous sequence.

One such amplification technique is inverse PCR (*see* Triglia et al., *Nucl. Acids Res.* 16:8186, 1988), which uses restriction enzymes to generate a fragment in the known region of the gene. The fragment is then circularized by intramolecular ligation and used as a template for PCR with divergent primers derived from the known region. Within an alternative approach, sequences adjacent to a partial sequence may be retrieved by amplification with a primer to a linker sequence and a primer specific to a known region. The amplified sequences are typically subjected to a second round of amplification with the same linker primer and a second primer specific to the known region. A variation on this procedure, which employs two primers that initiate extension in opposite directions from the known sequence, is described in WO 96/38591. Another such technique is known as "rapid amplification of cDNA ends" or RACE. This technique involves the use of an internal primer and an external primer, which hybridizes to a polyA region or vector sequence, to identify sequences that are 5' and 3' of a known sequence. Additional techniques include capture PCR (Lagerstrom et al., *PCR Methods Applic.* 1:111-19, 1991) and walking PCR (Parker et al., *Nucl. Acids Res.* 19:3055-60, 1991). Other methods employing amplification may also be employed to obtain a full length cDNA sequence.

In certain instances, it is possible to obtain a full length cDNA sequence by analysis of sequences provided in an expressed sequence tag (EST) database, such as that available from GenBank. Searches for overlapping ESTs may generally be performed using well known programs (*e.g.*, NCBI BLAST searches), and such ESTs may be used to generate a contiguous full length sequence.

Certain nucleic acid sequences of cDNA molecules encoding at least a portion of a prostate tumor protein are provided in SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472. Isolation of these polynucleotides is described below. Each of these prostate tumor proteins was overexpressed in prostate tumor tissue.

Polynucleotide variants may generally be prepared by any method known in the art, including chemical synthesis by, for example, solid phase phosphoramidite chemical synthesis. Modifications in a polynucleotide sequence may

also be introduced using standard mutagenesis techniques, such as oligonucleotide-directed site-specific mutagenesis (*see* Adelman et al., *DNA* 2:183, 1983). Alternatively, RNA molecules may be generated by *in vitro* or *in vivo* transcription of DNA sequences encoding a prostate tumor protein, or portion thereof, provided that the DNA is incorporated into a vector with a suitable RNA polymerase promoter (such as T7 or SP6). Certain portions may be used to prepare an encoded polypeptide, as described herein. In addition, or alternatively, a portion may be administered to a patient such that the encoded polypeptide is generated *in vivo* (*e.g.*, by transfecting antigen-presenting cells, such as dendritic cells, with a cDNA construct encoding a prostate tumor polypeptide, and administering the transfected cells to the patient).

A portion of a sequence complementary to a coding sequence (*i.e.*, an antisense polynucleotide) may also be used as a probe or to modulate gene expression. cDNA constructs that can be transcribed into antisense RNA may also be introduced into cells of tissues to facilitate the production of antisense RNA. An antisense polynucleotide may be used, as described herein, to inhibit expression of a tumor protein. Antisense technology can be used to control gene expression through triple-helix formation, which compromises the ability of the double helix to open sufficiently for the binding of polymerases, transcription factors or regulatory molecules (*see* Gee et al., *In Huber and Carr, Molecular and Immunologic Approaches*, Futura Publishing Co. (Mt. Kisco, NY; 1994)). Alternatively, an antisense molecule may be designed to hybridize with a control region of a gene (*e.g.*, promoter, enhancer or transcription initiation site), and block transcription of the gene; or to block translation by inhibiting binding of a transcript to ribosomes.

A portion of a coding sequence, or of a complementary sequence, may also be designed as a probe or primer to detect gene expression. Probes may be labeled with a variety of reporter groups, such as radionuclides and enzymes, and are preferably at least 10 nucleotides in length, more preferably at least 20 nucleotides in length and still more preferably at least 30 nucleotides in length. Primers, as noted above, are preferably 22-30 nucleotides in length.

Any polynucleotide may be further modified to increase stability *in vivo*. Possible modifications include, but are not limited to, the addition of flanking sequences at the 5' and/or 3' ends; the use of phosphorothioate or 2' O-methyl rather than phosphodiesterase linkages in the backbone; and/or the inclusion of nontraditional bases such as inosine, queosine and wybutosine, as well as acetyl-, methyl-, thio- and other modified forms of adenine, cytidine, guanine, thymine and uridine.

Nucleotide sequences as described herein may be joined to a variety of other nucleotide sequences using established recombinant DNA techniques. For example, a polynucleotide may be cloned into any of a variety of cloning vectors, including plasmids, phagemids, lambda phage derivatives and cosmids. Vectors of particular interest include expression vectors, replication vectors, probe generation vectors and sequencing vectors. In general, a vector will contain an origin of replication functional in at least one organism, convenient restriction endonuclease sites and one or more selectable markers. Other elements will depend upon the desired use, and will be apparent to those of ordinary skill in the art.

Within certain embodiments, polynucleotides may be formulated so as to permit entry into a cell of a mammal, and expression therein. Such formulations are particularly useful for therapeutic purposes, as described below. Those of ordinary skill in the art will appreciate that there are many ways to achieve expression of a polynucleotide in a target cell, and any suitable method may be employed. For example, a polynucleotide may be incorporated into a viral vector such as, but not limited to, adenovirus, adeno-associated virus, retrovirus, or vaccinia or other pox virus (*e.g.*, avian pox virus). Techniques for incorporating DNA into such vectors are well known to those of ordinary skill in the art. A retroviral vector may additionally transfer or incorporate a gene for a selectable marker (to aid in the identification or selection of transduced cells) and/or a targeting moiety, such as a gene that encodes a ligand for a receptor on a specific target cell, to render the vector target specific. Targeting may also be accomplished using an antibody, by methods known to those of ordinary skill in the art.

Other formulations for therapeutic purposes include colloidal dispersion systems, such as macromolecule complexes, nanocapsules, microspheres, beads, and lipid-based systems including oil-in-water emulsions, micelles, mixed micelles, and liposomes. A preferred colloidal system for use as a delivery vehicle *in vitro* and *in vivo* is a liposome (*i.e.*, an artificial membrane vesicle). The preparation and use of such systems is well known in the art.

PROSTATE TUMOR POLYPEPTIDES

Within the context of the present invention, polypeptides may comprise at least an immunogenic portion of a prostate tumor protein or a variant thereof, as described herein. As noted above, a "prostate tumor protein" is a protein that is expressed by prostate tumor cells. Proteins that are prostate tumor proteins also react detectably within an immunoassay (such as an ELISA) with antisera from a patient with prostate cancer. Polypeptides as described herein may be of any length. Additional sequences derived from the native protein and/or heterologous sequences may be present, and such sequences may (but need not) possess further immunogenic or antigenic properties.

An "immunogenic portion," as used herein is a portion of a protein that is recognized (*i.e.*, specifically bound) by a B-cell and/or T-cell surface antigen receptor. Such immunogenic portions generally comprise at least 5 amino acid residues, more preferably at least 10, and still more preferably at least 20 amino acid residues of a prostate tumor protein or a variant thereof. Certain preferred immunogenic portions include peptides in which an N-terminal leader sequence and/or transmembrane domain have been deleted. Other preferred immunogenic portions may contain a small N- and/or C-terminal deletion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids), relative to the mature protein.

Immunogenic portions may generally be identified using well known techniques, such as those summarized in Paul, *Fundamental Immunology*, 3rd ed., 243-247 (Raven Press, 1993) and references cited therein. Such techniques include screening polypeptides for the ability to react with antigen-specific antibodies, antisera

and/or T-cell lines or clones. As used herein, antisera and antibodies are "antigen-specific" if they specifically bind to an antigen (*i.e.*, they react with the protein in an ELISA or other immunoassay, and do not react detectably with unrelated proteins). Such antisera and antibodies may be prepared as described herein, and using well known techniques. An immunogenic portion of a native prostate tumor protein is a portion that reacts with such antisera and/or T-cells at a level that is not substantially less than the reactivity of the full length polypeptide (*e.g.*, in an ELISA and/or T-cell reactivity assay). Such immunogenic portions may react within such assays at a level that is similar to or greater than the reactivity of the full length polypeptide. Such screens may generally be performed using methods well known to those of ordinary skill in the art, such as those described in Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. For example, a polypeptide may be immobilized on a solid support and contacted with patient sera to allow binding of antibodies within the sera to the immobilized polypeptide. Unbound sera may then be removed and bound antibodies detected using, for example, ¹²⁵I-labeled Protein A.

As noted above, a composition may comprise a variant of a native prostate tumor protein. A polypeptide "variant," as used herein, is a polypeptide that differs from a native prostate tumor protein in one or more substitutions, deletions, additions and/or insertions, such that the immunogenicity of the polypeptide is not substantially diminished. In other words, the ability of a variant to react with antigen-specific antisera may be enhanced or unchanged, relative to the native protein, or may be diminished by less than 50%, and preferably less than 20%, relative to the native protein. Such variants may generally be identified by modifying one of the above polypeptide sequences and evaluating the reactivity of the modified polypeptide with antigen-specific antibodies or antisera as described herein. Preferred variants include those in which one or more portions, such as an N-terminal leader sequence or transmembrane domain, have been removed. Other preferred variants include variants in which a small portion (*e.g.*, 1-30 amino acids, preferably 5-15 amino acids) has been removed from the N- and/or C-terminal of the mature protein. Polypeptide variants preferably exhibit at least about 70%, more preferably at least about 90% and most

preferably at least about 95% identity (determined as described above) to the identified polypeptides.

Preferably, a variant contains conservative substitutions. A "conservative substitution" is one in which an amino acid is substituted for another amino acid that has similar properties, such that one skilled in the art of peptide chemistry would expect the secondary structure and hydropathic nature of the polypeptide to be substantially unchanged. Amino acid substitutions may generally be made on the basis of similarity in polarity, charge, solubility, hydrophobicity, hydrophilicity and/or the amphipathic nature of the residues. For example, negatively charged amino acids include aspartic acid and glutamic acid; positively charged amino acids include lysine and arginine; and amino acids with uncharged polar head groups having similar hydrophilicity values include leucine, isoleucine and valine; glycine and alanine; asparagine and glutamine; and serine, threonine, phenylalanine and tyrosine. Other groups of amino acids that may represent conservative changes include: (1) ala, pro, gly, glu, asp, gln, asn, ser, thr; (2) cys, ser, tyr, thr; (3) val, ile, leu, met, ala, phe; (4) lys, arg, his; and (5) phe, tyr, trp, his. A variant may also, or alternatively, contain nonconservative changes. In a preferred embodiment, variant polypeptides differ from a native sequence by substitution, deletion or addition of five amino acids or fewer. Variants may also (or alternatively) be modified by, for example, the deletion or addition of amino acids that have minimal influence on the immunogenicity, secondary structure and hydropathic nature of the polypeptide.

As noted above, polypeptides may comprise a signal (or leader) sequence at the N-terminal end of the protein which co-translationally or post-translationally directs transfer of the protein. The polypeptide may also be conjugated to a linker or other sequence for ease of synthesis, purification or identification of the polypeptide (*e.g.*, poly-His), or to enhance binding of the polypeptide to a solid support. For example, a polypeptide may be conjugated to an immunoglobulin Fc region.

Polypeptides may be prepared using any of a variety of well known techniques. Recombinant polypeptides encoded by DNA sequences as described above may be readily prepared from the DNA sequences using any of a variety of expression

vectors known to those of ordinary skill in the art. Expression may be achieved in any appropriate host cell that has been transformed or transfected with an expression vector containing a DNA molecule that encodes a recombinant polypeptide. Suitable host cells include prokaryotes, yeast and higher eukaryotic cells. Preferably, the host cells employed are *E. coli*, yeast or a mammalian cell line such as COS or CHO. Supernatants from suitable host/vector systems which secrete recombinant protein or polypeptide into culture media may be first concentrated using a commercially available filter. Following concentration, the concentrate may be applied to a suitable purification matrix such as an affinity matrix or an ion exchange resin. Finally, one or more reverse phase HPLC steps can be employed to further purify a recombinant polypeptide.

Portions and other variants having fewer than about 100 amino acids, and generally fewer than about 50 amino acids, may also be generated by synthetic means, using techniques well known to those of ordinary skill in the art. For example, such polypeptides may be synthesized using any of the commercially available solid-phase techniques, such as the Merrifield solid-phase synthesis method, where amino acids are sequentially added to a growing amino acid chain. See Merrifield, *J. Am. Chem. Soc.* 85:2149-2146, 1963. Equipment for automated synthesis of polypeptides is commercially available from suppliers such as Perkin Elmer/Applied BioSystems Division (Foster City, CA), and may be operated according to the manufacturer's instructions.

Within certain specific embodiments, a polypeptide may be a fusion protein that comprises multiple polypeptides as described herein, or that comprises at least one polypeptide as described herein and an unrelated sequence, such as a known tumor protein. A fusion partner may, for example, assist in providing T helper epitopes (an immunological fusion partner), preferably T helper epitopes recognized by humans, or may assist in expressing the protein (an expression enhancer) at higher yields than the native recombinant protein. Certain preferred fusion partners are both immunological and expression enhancing fusion partners. Other fusion partners may be selected so as to increase the solubility of the protein or to enable the protein to be

targeted to desired intracellular compartments. Still further fusion partners include affinity tags, which facilitate purification of the protein.

In certain embodiments, the present invention provides fusion proteins comprising a polypeptide disclosed herein together with at least one of the following known prostate antigens: prostate specific antigen (PSA); prostatic acid phosphatase (PAP); and prostate specific membrane antigen (PSMA). The protein sequences for PSMA, PAP and PSA are provided in SEQ ID NO: 473-475, respectively. In certain embodiments, the fusion proteins of the present invention comprise PSA, PAP and/or PSMA in combination with one or more of the following the inventive antigens: P501S (amino acid sequence provided in SEQ ID NO: 113); P703P (amino acid sequences provided in SEQ ID NO: 327, 329, 331); P704P (cDNA sequence provided in SEQ ID NO: 67); P712P (cDNA sequence provided in SEQ ID NO: 308); P775P (cDNA sequence provided in SEQ ID NO: 311); P776P (cDNA sequence provided in SEQ ID NO: 354); P790P (cDNA sequence provided in SEQ ID NO: 352). The amino acid sequence of a fusion protein of PSA, P703P and P501S is provided in SEQ ID NO: 476. In preferred embodiments, the inventive fusion proteins comprise one of the following combinations of antigens: PSA and P703P; PSA and P501S; PAP and P703P; PAP and P501S; PSMA and P703P; PSMA and P501S; PSA, PAP and P703P; PSA, PAP and P501S; PSA, PAP, PSMA and P703P, PSA, PAP, PSMA and P501S. One of skill in the art will appreciate that the order of polypeptides within a fusion protein can be altered without substantially changing the therapeutic, prophylactic or diagnostic properties of the fusion protein.

The fusion proteins described above are more immunogenic and will be effective in a greater number of prostate cancer patients than any of the individual components alone. The use of multiple antigens in the form of a fusion protein also lessens the likelihood of immunologic escape.

Fusion proteins may generally be prepared using standard techniques, including chemical conjugation. Preferably, a fusion protein is expressed as a recombinant protein, allowing the production of increased levels, relative to a non-fused protein, in an expression system. Briefly, DNA sequences encoding the polypeptide

components may be assembled separately, and ligated into an appropriate expression vector. The 3' end of the DNA sequence encoding one polypeptide component is ligated, with or without a peptide linker, to the 5' end of a DNA sequence encoding the second polypeptide component so that the reading frames of the sequences are in phase. This permits translation into a single fusion protein that retains the biological activity of both component polypeptides.

A peptide linker sequence may be employed to separate the first and the second polypeptide components by a distance sufficient to ensure that each polypeptide folds into its secondary and tertiary structures. Such a peptide linker sequence is incorporated into the fusion protein using standard techniques well known in the art. Suitable peptide linker sequences may be chosen based on the following factors: (1) their ability to adopt a flexible extended conformation; (2) their inability to adopt a secondary structure that could interact with functional epitopes on the first and second polypeptides; and (3) the lack of hydrophobic or charged residues that might react with the polypeptide functional epitopes. Preferred peptide linker sequences contain Gly, Asn and Ser residues. Other near neutral amino acids, such as Thr and Ala may also be used in the linker sequence. Amino acid sequences which may be usefully employed as linkers include those disclosed in Maratea et al., *Gene* 40:39-46, 1985; Murphy et al., *Proc. Natl. Acad. Sci. USA* 83:8258-8262, 1986; U.S. Patent No. 4,935,233 and U.S. Patent No. 4,751,180. The linker sequence may generally be from 1 to about 50 amino acids in length. Linker sequences are not required when the first and second polypeptides have non-essential N-terminal amino acid regions that can be used to separate the functional domains and prevent steric interference.

The ligated DNA sequences are operably linked to suitable transcriptional or translational regulatory elements. The regulatory elements responsible for expression of DNA are located only 5' to the DNA sequence encoding the first polypeptides. Similarly, stop codons required to end translation and transcription termination signals are only present 3' to the DNA sequence encoding the second polypeptide.

Fusion proteins are also provided that comprise a polypeptide of the present invention together with an unrelated immunogenic protein. Preferably the immunogenic protein is capable of eliciting a recall response. Examples of such proteins include tetanus, tuberculosis and hepatitis proteins (*see*, for example, Stoute et al. *New Engl. J. Med.*, 336:86-91, 1997).

Within preferred embodiments, an immunological fusion partner is derived from protein D, a surface protein of the gram-negative bacterium *Haemophilus influenza B* (WO 91/18926). Preferably, a protein D derivative comprises approximately the first third of the protein (*e.g.*, the first N-terminal 100-110 amino acids), and a protein D derivative may be lipidated. Within certain preferred embodiments, the first 109 residues of a Lipoprotein D fusion partner is included on the N-terminus to provide the polypeptide with additional exogenous T-cell epitopes and to increase the expression level in *E. coli* (thus functioning as an expression enhancer). The lipid tail ensures optimal presentation of the antigen to antigen presenting cells. Other fusion partners include the non-structural protein from influenzae virus, NS1 (hemagglutinin). Typically, the N-terminal 81 amino acids are used, although different fragments that include T-helper epitopes may be used.

In another embodiment, the immunological fusion partner is the protein known as LYTA, or a portion thereof (preferably a C-terminal portion). LYTA is derived from *Streptococcus pneumoniae*, which synthesizes an N-acetyl-L-alanine amidase known as amidase LYTA (encoded by the *LytA* gene; *Gene* 43:265-292, 1986). LYTA is an autolysin that specifically degrades certain bonds in the peptidoglycan backbone. The C-terminal domain of the LYTA protein is responsible for the affinity to the choline or to some choline analogues such as DEAE. This property has been exploited for the development of *E. coli* C-LYTA expressing plasmids useful for expression of fusion proteins. Purification of hybrid proteins containing the C-LYTA fragment at the amino terminus has been described (*see Biotechnology* 10:795-798, 1992). Within a preferred embodiment, a repeat portion of LYTA may be incorporated into a fusion protein. A repeat portion is found in the C-

terminal region starting at residue 178. A particularly preferred repeat portion incorporates residues 188-305.

In general, polypeptides (including fusion proteins) and polynucleotides as described herein are isolated. An "isolated" polypeptide or polynucleotide is one that is removed from its original environment. For example, a naturally-occurring protein is isolated if it is separated from some or all of the coexisting materials in the natural system. Preferably, such polypeptides are at least about 90% pure, more preferably at least about 95% pure and most preferably at least about 99% pure. A polynucleotide is considered to be isolated if, for example, it is cloned into a vector that is not a part of the natural environment.

BINDING AGENTS

The present invention further provides agents, such as antibodies and antigen-binding fragments thereof, that specifically bind to a prostate tumor protein. As used herein, an antibody, or antigen-binding fragment thereof, is said to "specifically bind" to a prostate tumor protein if it reacts at a detectable level (within, for example, an ELISA) with a prostate tumor protein, and does not react detectably with unrelated proteins under similar conditions. As used herein, "binding" refers to a noncovalent association between two separate molecules such that a complex is formed. The ability to bind may be evaluated by, for example, determining a binding constant for the formation of the complex. The binding constant is the value obtained when the concentration of the complex is divided by the product of the component concentrations. In general, two compounds are said to "bind," in the context of the present invention, when the binding constant for complex formation exceeds about 10^3 L/mol. The binding constant may be determined using methods well known in the art.

Binding agents may be further capable of differentiating between patients with and without a cancer, such as prostate cancer, using the representative assays provided herein. In other words, antibodies or other binding agents that bind to a prostate tumor protein will generate a signal indicating the presence of a cancer in at least about 20% of patients with the disease, and will generate a negative signal

indicating the absence of the disease in at least about 90% of individuals without the cancer. To determine whether a binding agent satisfies this requirement, biological samples (*e.g.*, blood, sera, urine and/or tumor biopsies) from patients with and without a cancer (as determined using standard clinical tests) may be assayed as described herein for the presence of polypeptides that bind to the binding agent. It will be apparent that a statistically significant number of samples with and without the disease should be assayed. Each binding agent should satisfy the above criteria; however, those of ordinary skill in the art will recognize that binding agents may be used in combination to improve sensitivity.

Any agent that satisfies the above requirements may be a binding agent. For example, a binding agent may be a ribosome, with or without a peptide component, an RNA molecule or a polypeptide. In a preferred embodiment, a binding agent is an antibody or an antigen-binding fragment thereof. Antibodies may be prepared by any of a variety of techniques known to those of ordinary skill in the art. *See, e.g.*, Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, antibodies can be produced by cell culture techniques, including the generation of monoclonal antibodies as described herein, or via transfection of antibody genes into suitable bacterial or mammalian cell hosts, in order to allow for the production of recombinant antibodies. In one technique, an immunogen comprising the polypeptide is initially injected into any of a wide variety of mammals (*e.g.*, mice, rats, rabbits, sheep or goats). In this step, the polypeptides of this invention may serve as the immunogen without modification. Alternatively, particularly for relatively short polypeptides, a superior immune response may be elicited if the polypeptide is joined to a carrier protein, such as bovine serum albumin or keyhole limpet hemocyanin. The immunogen is injected into the animal host, preferably according to a predetermined schedule incorporating one or more booster immunizations, and the animals are bled periodically. Polyclonal antibodies specific for the polypeptide may then be purified from such antisera by, for example, affinity chromatography using the polypeptide coupled to a suitable solid support.

Monoclonal antibodies specific for an antigenic polypeptide of interest may be prepared, for example, using the technique of Kohler and Milstein, *Eur. J. Immunol.* 6:511-519, 1976, and improvements thereto. Briefly, these methods involve the preparation of immortal cell lines capable of producing antibodies having the desired specificity (*i.e.*, reactivity with the polypeptide of interest). Such cell lines may be produced, for example, from spleen cells obtained from an animal immunized as described above. The spleen cells are then immortalized by, for example, fusion with a myeloma cell fusion partner, preferably one that is syngeneic with the immunized animal. A variety of fusion techniques may be employed. For example, the spleen cells and myeloma cells may be combined with a nonionic detergent for a few minutes and then plated at low density on a selective medium that supports the growth of hybrid cells, but not myeloma cells. A preferred selection technique uses HAT (hypoxanthine, aminopterin, thymidine) selection. After a sufficient time, usually about 1 to 2 weeks, colonies of hybrids are observed. Single colonies are selected and their culture supernatants tested for binding activity against the polypeptide. Hybridomas having high reactivity and specificity are preferred.

Monoclonal antibodies may be isolated from the supernatants of growing hybridoma colonies. In addition, various techniques may be employed to enhance the yield, such as injection of the hybridoma cell line into the peritoneal cavity of a suitable vertebrate host, such as a mouse. Monoclonal antibodies may then be harvested from the ascites fluid or the blood. Contaminants may be removed from the antibodies by conventional techniques, such as chromatography, gel filtration, precipitation, and extraction. The polypeptides of this invention may be used in the purification process in, for example, an affinity chromatography step.

Within certain embodiments, the use of antigen-binding fragments of antibodies may be preferred. Such fragments include Fab fragments, which may be prepared using standard techniques. Briefly, immunoglobulins may be purified from rabbit serum by affinity chromatography on Protein A bead columns (Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988) and digested

by papain to yield Fab and Fc fragments. The Fab and Fc fragments may be separated by affinity chromatography on protein A bead columns.

Monoclonal antibodies of the present invention may be coupled to one or more therapeutic agents. Suitable agents in this regard include radionuclides, differentiation inducers, drugs, toxins, and derivatives thereof. Preferred radionuclides include ^{90}Y , ^{123}I , ^{125}I , ^{131}I , ^{186}Re , ^{188}Re , ^{211}At , and ^{212}Bi . Preferred drugs include methotrexate, and pyrimidine and purine analogs. Preferred differentiation inducers include phorbol esters and butyric acid. Preferred toxins include ricin, abrin, diphtheria toxin, cholera toxin, gelonin, *Pseudomonas* exotoxin, *Shigella* toxin, and pokeweed antiviral protein.

A therapeutic agent may be coupled (*e.g.*, covalently bonded) to a suitable monoclonal antibody either directly or indirectly (*e.g.*, via a linker group). A direct reaction between an agent and an antibody is possible when each possesses a substituent capable of reacting with the other. For example, a nucleophilic group, such as an amino or sulfhydryl group, on one may be capable of reacting with a carbonyl-containing group, such as an anhydride or an acid halide, or with an alkyl group containing a good leaving group (*e.g.*, a halide) on the other.

Alternatively, it may be desirable to couple a therapeutic agent and an antibody via a linker group. A linker group can function as a spacer to distance an antibody from an agent in order to avoid interference with binding capabilities. A linker group can also serve to increase the chemical reactivity of a substituent on an agent or an antibody, and thus increase the coupling efficiency. An increase in chemical reactivity may also facilitate the use of agents, or functional groups on agents, which otherwise would not be possible.

It will be evident to those skilled in the art that a variety of bifunctional or polyfunctional reagents, both homo- and hetero-functional (such as those described in the catalog of the Pierce Chemical Co., Rockford, IL), may be employed as the linker group. Coupling may be effected, for example, through amino groups, carboxyl groups, sulfhydryl groups or oxidized carbohydrate residues. There are numerous references describing such methodology, *e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.

Where a therapeutic agent is more potent when free from the antibody portion of the immunoconjugates of the present invention, it may be desirable to use a linker group which is cleavable during or upon internalization into a cell. A number of different cleavable linker groups have been described. The mechanisms for the intracellular release of an agent from these linker groups include cleavage by reduction of a disulfide bond (*e.g.*, U.S. Patent No. 4,489,710, to Spitler), by irradiation of a photolabile bond (*e.g.*, U.S. Patent No. 4,625,014, to Senter et al.), by hydrolysis of derivatized amino acid side chains (*e.g.*, U.S. Patent No. 4,638,045, to Kohn et al.), by serum complement-mediated hydrolysis (*e.g.*, U.S. Patent No. 4,671,958, to Rodwell et al.), and acid-catalyzed hydrolysis (*e.g.*, U.S. Patent No. 4,569,789, to Blattler et al.).

It may be desirable to couple more than one agent to an antibody. In one embodiment, multiple molecules of an agent are coupled to one antibody molecule. In another embodiment, more than one type of agent may be coupled to one antibody. Regardless of the particular embodiment, immunoconjugates with more than one agent may be prepared in a variety of ways. For example, more than one agent may be coupled directly to an antibody molecule, or linkers which provide multiple sites for attachment can be used. Alternatively, a carrier can be used.

A carrier may bear the agents in a variety of ways, including covalent bonding either directly or via a linker group. Suitable carriers include proteins such as albumins (*e.g.*, U.S. Patent No. 4,507,234, to Kato et al.), peptides and polysaccharides such as aminodextran (*e.g.*, U.S. Patent No. 4,699,784, to Shih et al.). A carrier may also bear an agent by noncovalent bonding or by encapsulation, such as within a liposome vesicle (*e.g.*, U.S. Patent Nos. 4,429,008 and 4,873,088). Carriers specific for radionuclide agents include radiohalogenated small molecules and chelating compounds. For example, U.S. Patent No. 4,735,792 discloses representative radiohalogenated small molecules and their synthesis. A radionuclide chelate may be formed from chelating compounds that include those containing nitrogen and sulfur atoms as the donor atoms for binding the metal, or metal oxide, radionuclide. For example, U.S. Patent No. 4,673,562, to Davison et al. discloses representative chelating compounds and their synthesis.

A variety of routes of administration for the antibodies and immunoconjugates may be used. Typically, administration will be intravenous, intramuscular, subcutaneous or in the bed of a resected tumor. It will be evident that the precise dose of the antibody/immunoconjugate will vary depending upon the antibody used, the antigen density on the tumor, and the rate of clearance of the antibody.

T CELLS

Immunotherapeutic compositions may also, or alternatively, comprise T cells specific for a prostate tumor protein. Such cells may generally be prepared *in vitro* or *ex vivo*, using standard procedures. For example, T cells may be isolated from bone marrow, peripheral blood, or a fraction of bone marrow or peripheral blood of a patient, using a commercially available cell separation system, such as the CEPRATE™ system, available from CellPro Inc., Bothell WA (*see also* U.S. Patent No. 5,240,856; U.S. Patent No. 5,215,926; WO 89/06280; WO 91/16116 and WO 92/07243). Alternatively, T cells may be derived from related or unrelated humans, non-human mammals, cell lines or cultures.

T cells may be stimulated with a prostate tumor polypeptide, polynucleotide encoding a prostate tumor polypeptide and/or an antigen presenting cell (APC) that expresses such a polypeptide. Such stimulation is performed under conditions and for a time sufficient to permit the generation of T cells that are specific for the polypeptide. Preferably, a prostate tumor polypeptide or polynucleotide is present within a delivery vehicle, such as a microsphere, to facilitate the generation of specific T cells.

T cells are considered to be specific for a prostate tumor polypeptide if the T cells kill target cells coated with the polypeptide or expressing a gene encoding the polypeptide. T cell specificity may be evaluated using any of a variety of standard techniques. For example, within a chromium release assay or proliferation assay, a stimulation index of more than two fold increase in lysis and/or proliferation, compared to negative controls, indicates T cell specificity. Such assays may be performed, for example, as described in Chen et al., *Cancer Res.* 54:1065-1070, 1994. Alternatively,

detection of the proliferation of T cells may be accomplished by a variety of known techniques. For example, T cell proliferation can be detected by measuring an increased rate of DNA synthesis (*e.g.*, by pulse-labeling cultures of T cells with tritiated thymidine and measuring the amount of tritiated thymidine incorporated into DNA). Contact with a prostate tumor polypeptide (100 ng/ml - 100 µg/ml, preferably 200 ng/ml - 25 µg/ml) for 3 - 7 days should result in at least a two fold increase in proliferation of the T cells. Contact as described above for 2-3 hours should result in activation of the T cells, as measured using standard cytokine assays in which a two fold increase in the level of cytokine release (*e.g.*, TNF or IFN-γ) is indicative of T cell activation (*see* Coligan et al., Current Protocols in Immunology, vol. 1, Wiley Interscience (Greene 1998)). T cells that have been activated in response to a prostate tumor polypeptide, polynucleotide or polypeptide-expressing APC may be CD4⁺ and/or CD8⁺. Prostate tumor protein-specific T cells may be expanded using standard techniques. Within preferred embodiments, the T cells are derived from either a patient or a related, or unrelated, donor and are administered to the patient following stimulation and expansion.

For therapeutic purposes, CD4⁺ or CD8⁺ T cells that proliferate in response to a prostate tumor polypeptide, polynucleotide or APC can be expanded in number either *in vitro* or *in vivo*. Proliferation of such T cells *in vitro* may be accomplished in a variety of ways. For example, the T cells can be re-exposed to a prostate tumor polypeptide, or a short peptide corresponding to an immunogenic portion of such a polypeptide, with or without the addition of T cell growth factors, such as interleukin-2, and/or stimulator cells that synthesize a prostate tumor polypeptide. Alternatively, one or more T cells that proliferate in the presence of a prostate tumor protein can be expanded in number by cloning. Methods for cloning cells are well known in the art, and include limiting dilution.

PHARMACEUTICAL COMPOSITIONS AND VACCINES

Within certain aspects, polypeptides, polynucleotides, T cells and/or binding agents disclosed herein may be incorporated into pharmaceutical compositions

or immunogenic compositions (*i.e.*, vaccines). Pharmaceutical compositions comprise one or more such compounds and a physiologically acceptable carrier. Vaccines may comprise one or more such compounds and a non-specific immune response enhancer. A non-specific immune response enhancer may be any substance that enhances an immune response to an exogenous antigen. Examples of non-specific immune response enhancers include adjuvants, biodegradable microspheres (*e.g.*, polylactic galactide) and liposomes (into which the compound is incorporated; *see e.g.*, Fullerton, U.S. Patent No. 4,235,877). Vaccine preparation is generally described in, for example, M.F. Powell and M.J. Newman, eds., "Vaccine Design (the subunit and adjuvant approach)," Plenum Press (NY, 1995). Pharmaceutical compositions and vaccines within the scope of the present invention may also contain other compounds, which may be biologically active or inactive. For example, one or more immunogenic portions of other tumor antigens may be present, either incorporated into a fusion polypeptide or as a separate compound, within the composition or vaccine.

A pharmaceutical composition or vaccine may contain DNA encoding one or more of the polypeptides as described above, such that the polypeptide is generated *in situ*. As noted above, the DNA may be present within any of a variety of delivery systems known to those of ordinary skill in the art, including nucleic acid expression systems, bacteria and viral expression systems. Numerous gene delivery techniques are well known in the art, such as those described by Rolland, *Crit. Rev. Therap. Drug Carrier Systems* 15:143-198, 1998, and references cited therein. Appropriate nucleic acid expression systems contain the necessary DNA sequences for expression in the patient (such as a suitable promoter and terminating signal). Bacterial delivery systems involve the administration of a bacterium (such as *Bacillus-Calmette-Guerrin*) that expresses an immunogenic portion of the polypeptide on its cell surface or secretes such an epitope. In a preferred embodiment, the DNA may be introduced using a viral expression system (*e.g.*, vaccinia or other pox virus, retrovirus, or adenovirus), which may involve the use of a non-pathogenic (defective), replication competent virus. Suitable systems are disclosed, for example, in Fisher-Hoch et al., *Proc. Natl. Acad. Sci. USA* 86:317-321, 1989; Flexner et al., *Ann. N.Y. Acad. Sci.* 569:86-103, 1989; Flexner

et al., *Vaccine* 8:17-21, 1990; U.S. Patent Nos. 4,603,112, 4,769,330, and 5,017,487; WO 89/01973; U.S. Patent No. 4,777,127; GB 2,200,651; EP 0,345,242; WO 91/02805; Berkner, *Biotechniques* 6:616-627, 1988; Rosenfeld et al., *Science* 252:431-434, 1991; Kolls et al., *Proc. Natl. Acad. Sci. USA* 91:215-219, 1994; Kass-Eisler et al., *Proc. Natl. Acad. Sci. USA* 90:11498-11502, 1993; Guzman et al., *Circulation* 88:2838-2848, 1993; and Guzman et al., *Cir. Res.* 73:1202-1207, 1993. Techniques for incorporating DNA into such expression systems are well known to those of ordinary skill in the art. The DNA may also be "naked," as described, for example, in Ulmer et al., *Science* 259:1745-1749, 1993 and reviewed by Cohen, *Science* 259:1691-1692, 1993. The uptake of naked DNA may be increased by coating the DNA onto biodegradable beads, which are efficiently transported into the cells.

While any suitable carrier known to those of ordinary skill in the art may be employed in the pharmaceutical compositions of this invention, the type of carrier will vary depending on the mode of administration. Compositions of the present invention may be formulated for any appropriate manner of administration, including for example, topical, oral, nasal, intravenous, intracranial, intraperitoneal, subcutaneous or intramuscular administration. For parenteral administration, such as subcutaneous injection, the carrier preferably comprises water, saline, alcohol, a fat, a wax or a buffer. For oral administration, any of the above carriers or a solid carrier, such as mannitol, lactose, starch, magnesium stearate, sodium saccharine, talcum, cellulose, glucose, sucrose, and magnesium carbonate, may be employed. Biodegradable microspheres (e.g., polylactate polyglycolate) may also be employed as carriers for the pharmaceutical compositions of this invention. Suitable biodegradable microspheres are disclosed, for example, in U.S. Patent Nos. 4,897,268 and 5,075,109.

Such compositions may also comprise buffers (e.g., neutral buffered saline or phosphate buffered saline), carbohydrates (e.g., glucose, mannose, sucrose or dextrans), mannitol, proteins, polypeptides or amino acids such as glycine, antioxidants, chelating agents such as EDTA or glutathione, adjuvants (e.g., aluminum hydroxide) and/or preservatives. Alternatively, compositions of the present invention may be

formulated as a lyophilizate. Compounds may also be encapsulated within liposomes using well known technology.

Any of a variety of non-specific immune response enhancers may be employed in the vaccines of this invention. For example, an adjuvant may be included. Most adjuvants contain a substance designed to protect the antigen from rapid catabolism, such as aluminum hydroxide or mineral oil, and a stimulator of immune responses, such as lipid A, *Bordetella pertussis* or *Mycobacterium tuberculosis* derived proteins. Suitable adjuvants are commercially available as, for example, Freund's Incomplete Adjuvant and Complete Adjuvant (Difco Laboratories, Detroit, MI); Merck Adjuvant 65 (Merck and Company, Inc., Rahway, NJ); aluminum salts such as aluminum hydroxide gel (alum) or aluminum phosphate; salts of calcium, iron or zinc; an insoluble suspension of acylated tyrosine; acylated sugars; cationically or anionically derivatized polysaccharides; polyphosphazenes; biodegradable microspheres; monophosphoryl lipid A and quil A. Cytokines, such as GM-CSF or interleukin-2, -7, or -12, may also be used as adjuvants.

Within the vaccines provided herein, the adjuvant composition is preferably designed to induce an immune response predominantly of the Th1 type. High levels of Th1-type cytokines (e.g., IFN- γ , IL-2 and IL-12) tend to favor the induction of cell mediated immune responses to an administered antigen. In contrast, high levels of Th2-type cytokines (e.g., IL-4, IL-5, IL-6, IL-10 and TNF- β) tend to favor the induction of humoral immune responses. Following application of a vaccine as provided herein, a patient will support an immune response that includes Th1- and Th2-type responses. Within a preferred embodiment, in which a response is predominantly Th1-type, the level of Th1-type cytokines will increase to a greater extent than the level of Th2-type cytokines. The levels of these cytokines may be readily assessed using standard assays. For a review of the families of cytokines, see Mosmann and Coffman, *Ann. Rev. Immunol.* 7:145-173, 1989.

Preferred adjuvants for use in eliciting a predominantly Th1-type response include, for example, a combination of monophosphoryl lipid A, preferably 3-de-O-acylated monophosphoryl lipid A (3D-MPL), together with an aluminum salt.

MPL adjuvants are available from Ribi ImmunoChem Research Inc. (Hamilton, MT; *see* US Patent Nos. 4,436,727; 4,877,611; 4,866,034 and 4,912,094). CpG-containing oligonucleotides (in which the CpG dinucleotide is unmethylated) also induce a predominantly Th1 response. Such oligonucleotides are well known and are described, for example, in WO 96/02555. Another preferred adjuvant is a saponin, preferably QS21, which may be used alone or in combination with other adjuvants. For example, an enhanced system involves the combination of a monophosphoryl lipid A and saponin derivative, such as the combination of QS21 and 3D-MPL as described in WO 94/00153, or a less reactogenic composition where the QS21 is quenched with cholesterol, as described in WO 96/33739. Other preferred formulations comprises an oil-in-water emulsion and tocopherol. A particularly potent adjuvant formulation involving QS21, 3D-MPL and tocopherol in an oil-in-water emulsion is described in WO 95/17210. Any vaccine provided herein may be prepared using well known methods that result in a combination of antigen, immune response enhancer and a suitable carrier or excipient.

The compositions described herein may be administered as part of a sustained release formulation (*i.e.*, a formulation such as a capsule or sponge that effects a slow release of compound following administration). Such formulations may generally be prepared using well known technology and administered by, for example, oral, rectal or subcutaneous implantation, or by implantation at the desired target site. Sustained-release formulations may contain a polypeptide, polynucleotide or antibody dispersed in a carrier matrix and/or contained within a reservoir surrounded by a rate controlling membrane. Carriers for use within such formulations are biocompatible, and may also be biodegradable; preferably the formulation provides a relatively constant level of active component release. The amount of active compound contained within a sustained release formulation depends upon the site of implantation, the rate and expected duration of release and the nature of the condition to be treated or prevented.

Any of a variety of delivery vehicles may be employed within pharmaceutical compositions and vaccines to facilitate production of an antigen-specific

immune response that targets tumor cells. Delivery vehicles include antigen presenting cells (APCs), such as dendritic cells, macrophages, B cells, monocytes and other cells that may be engineered to be efficient APCs. Such cells may, but need not, be genetically modified to increase the capacity for presenting the antigen, to improve activation and/or maintenance of the T cell response, to have anti-tumor effects *per se* and/or to be immunologically compatible with the receiver (*i.e.*, matched HLA haplotype). APCs may generally be isolated from any of a variety of biological fluids and organs, including tumor and peritumoral tissues, and may be autologous, allogeneic, syngeneic or xenogeneic cells.

Certain preferred embodiments of the present invention use dendritic cells or progenitors thereof as antigen-presenting cells. Dendritic cells are highly potent APCs (Banchereau and Steinman, *Nature* 392:245-251, 1998) and have been shown to be effective as a physiological adjuvant for eliciting prophylactic or therapeutic antitumor immunity (*see* Timmerman and Levy, *Ann. Rev. Med.* 50:507-529, 1999). In general, dendritic cells may be identified based on their typical shape (stellate *in situ*, with marked cytoplasmic processes (dendrites) visible *in vitro*) and based on the lack of differentiation markers of B cells (CD19 and CD20), T cells (CD3), monocytes (CD14) and natural killer cells (CD56), as determined using standard assays. Dendritic cells may, of course, be engineered to express specific cell-surface receptors or ligands that are not commonly found on dendritic cells *in vivo* or *ex vivo*, and such modified dendritic cells are contemplated by the present invention. As an alternative to dendritic cells, secreted vesicles antigen-loaded dendritic cells (called exosomes) may be used within a vaccine (*see* Zitvogel et al., *Nature Med.* 4:594-600, 1998).

Dendritic cells and progenitors may be obtained from peripheral blood, bone marrow, tumor-infiltrating cells, peritumoral tissues-infiltrating cells, lymph nodes, spleen, skin, umbilical cord blood or any other suitable tissue or fluid. For example, dendritic cells may be differentiated *ex vivo* by adding a combination of cytokines such as GM-CSF, IL-4, IL-13 and/or TNF α to cultures of monocytes harvested from peripheral blood. Alternatively, CD34 positive cells harvested from peripheral blood, umbilical cord blood or bone marrow may be differentiated into

dendritic cells by adding to the culture medium combinations of GM-CSF, IL-3, TNF α , CD40 ligand, LPS, flt3 ligand and/or other compound(s) that induce maturation and proliferation of dendritic cells.

Dendritic cells are conveniently categorized as "immature" and "mature" cells, which allows a simple way to discriminate between two well characterized phenotypes. However, this nomenclature should not be construed to exclude all possible intermediate stages of differentiation. Immature dendritic cells are characterized as APC with a high capacity for antigen uptake and processing, which correlates with the high expression of Fc γ receptor, mannose receptor and DEC-205 marker. The mature phenotype is typically characterized by a lower expression of these markers, but a high expression of cell surface molecules responsible for T cell activation such as class I and class II MHC, adhesion molecules (*e.g.*, CD54 and CD11) and costimulatory molecules (*e.g.*, CD40, CD80 and CD86).

APCs may generally be transfected with a polynucleotide encoding a prostate tumor protein (or portion or other variant thereof) such that the prostate tumor polypeptide, or an immunogenic portion thereof, is expressed on the cell surface. Such transfection may take place *ex vivo*, and a composition or vaccine comprising such transfected cells may then be used for therapeutic purposes, as described herein. Alternatively, a gene delivery vehicle that targets a dendritic or other antigen presenting cell may be administered to a patient, resulting in transfection that occurs *in vivo*. *In vivo* and *ex vivo* transfection of dendritic cells, for example, may generally be performed using any methods known in the art, such as those described in WO 97/24447, or the gene gun approach described by Mahvi et al., *Immunology and cell Biology* 75:456-460, 1997. Antigen loading of dendritic cells may be achieved by incubating dendritic cells or progenitor cells with the prostate tumor polypeptide, DNA (naked or within a plasmid vector) or RNA; or with antigen-expressing recombinant bacterium or viruses (*e.g.*, vaccinia, fowlpox, adenovirus or lentivirus vectors). Prior to loading, the polypeptide may be covalently conjugated to an immunological partner that provides T cell help (*e.g.*, a carrier molecule). Alternatively, a dendritic cell may be

pulsed with a non-conjugated immunological partner, separately or in the presence of the polypeptide.

CANCER THERAPY

In further aspects of the present invention, the compositions described herein may be used for immunotherapy of cancer, such as prostate cancer. Within such methods, pharmaceutical compositions and vaccines are typically administered to a patient. As used herein, a "patient" refers to any warm-blooded animal, preferably a human. A patient may or may not be afflicted with cancer. Accordingly, the above pharmaceutical compositions and vaccines may be used to prevent the development of a cancer or to treat a patient afflicted with a cancer. A cancer may be diagnosed using criteria generally accepted in the art, including the presence of a malignant tumor. Pharmaceutical compositions and vaccines may be administered either prior to or following surgical removal of primary tumors and/or treatment such as administration of radiotherapy or conventional chemotherapeutic drugs.

Within certain embodiments, immunotherapy may be active immunotherapy, in which treatment relies on the *in vivo* stimulation of the endogenous host immune system to react against tumors with the administration of immune response-modifying agents (such as polypeptides and polynucleotides disclosed herein).

Within other embodiments, immunotherapy may be passive immunotherapy, in which treatment involves the delivery of agents with established tumor-immune reactivity (such as effector cells or antibodies) that can directly or indirectly mediate antitumor effects and does not necessarily depend on an intact host immune system. Examples of effector cells include T cells as discussed above, T lymphocytes (such as CD8⁺ cytotoxic T lymphocytes and CD4⁺ T-helper tumor-infiltrating lymphocytes), killer cells (such as Natural Killer cells and lymphokine-activated killer cells), B cells and antigen-presenting cells (such as dendritic cells and macrophages) expressing a polypeptide provided herein. T cell receptors and antibody receptors specific for the polypeptides recited herein may be cloned, expressed and transferred into other vectors or effector cells for adoptive immunotherapy. The

polypeptides provided herein may also be used to generate antibodies or anti-idiotypic antibodies (as described above and in U.S. Patent No. 4,918,164) for passive immunotherapy.

Effector cells may generally be obtained in sufficient quantities for adoptive immunotherapy by growth *in vitro*, as described herein. Culture conditions for expanding single antigen-specific effector cells to several billion in number with retention of antigen recognition *in vivo* are well known in the art. Such *in vitro* culture conditions typically use intermittent stimulation with antigen, often in the presence of cytokines (such as IL-2) and non-dividing feeder cells. As noted above, immunoreactive polypeptides as provided herein may be used to rapidly expand antigen-specific T cell cultures in order to generate a sufficient number of cells for immunotherapy. In particular, antigen-presenting cells, such as dendritic, macrophage, monocyte, fibroblast or B cells, may be pulsed with immunoreactive polypeptides or transfected with one or more polynucleotides using standard techniques well known in the art. For example, antigen-presenting cells can be transfected with a polynucleotide having a promoter appropriate for increasing expression in a recombinant virus or other expression system. Cultured effector cells for use in therapy must be able to grow and distribute widely, and to survive long term *in vivo*. Studies have shown that cultured effector cells can be induced to grow *in vivo* and to survive long term in substantial numbers by repeated stimulation with antigen supplemented with IL-2 (*see*, for example, Cheever et al., *Immunological Reviews* 157:177, 1997).

Alternatively, a vector expressing a polypeptide recited herein may be introduced into antigen presenting cells taken from a patient and clonally propagated *ex vivo* for transplant back into the same patient. Transfected cells may be reintroduced into the patient using any means known in the art, preferably in sterile form by intravenous, intracavitary, intraperitoneal or intratumor administration.

Routes and frequency of administration of the therapeutic compositions disclosed herein, as well as dosage, will vary from individual to individual, and may be readily established using standard techniques. In general, the pharmaceutical compositions and vaccines may be administered by injection (*e.g.*, intracutaneous,

intramuscular, intravenous or subcutaneous), intranasally (*e.g.*, by aspiration) or orally. Preferably, between 1 and 10 doses may be administered over a 52 week period. Preferably, 6 doses are administered, at intervals of 1 month, and booster vaccinations may be given periodically thereafter. Alternate protocols may be appropriate for individual patients. A suitable dose is an amount of a compound that, when administered as described above, is capable of promoting an anti-tumor immune response, and is at least 10-50% above the basal (*i.e.*, untreated) level. Such response can be monitored by measuring the anti-tumor antibodies in a patient or by vaccine-dependent generation of cytolytic effector cells capable of killing the patient's tumor cells *in vitro*. Such vaccines should also be capable of causing an immune response that leads to an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial or longer disease-free survival) in vaccinated patients as compared to non-vaccinated patients. In general, for pharmaceutical compositions and vaccines comprising one or more polypeptides, the amount of each polypeptide present in a dose ranges from about 100 µg to 5 mg per kg of host. Suitable dose sizes will vary with the size of the patient, but will typically range from about 0.1 mL to about 5 mL.

In general, an appropriate dosage and treatment regimen provides the active compound(s) in an amount sufficient to provide therapeutic and/or prophylactic benefit. Such a response can be monitored by establishing an improved clinical outcome (*e.g.*, more frequent remissions, complete or partial, or longer disease-free survival) in treated patients as compared to non-treated patients. Increases in preexisting immune responses to a prostate tumor protein generally correlate with an improved clinical outcome. Such immune responses may generally be evaluated using standard proliferation, cytotoxicity or cytokine assays, which may be performed using samples obtained from a patient before and after treatment.

METHODS FOR DETECTING CANCER

In general, a cancer may be detected in a patient based on the presence of one or more prostate tumor proteins and/or polynucleotides encoding such proteins in a biological sample (for example, blood, sera, urine and/or tumor biopsies) obtained from

the patient. In other words, such proteins may be used as markers to indicate the presence or absence of a cancer such as prostate cancer. In addition, such proteins may be useful for the detection of other cancers. The binding agents provided herein generally permit detection of the level of antigen that binds to the agent in the biological sample. Polynucleotide primers and probes may be used to detect the level of mRNA encoding a tumor protein, which is also indicative of the presence or absence of a cancer. In general, a prostate tumor sequence should be present at a level that is at least three fold higher in tumor tissue than in normal tissue

There are a variety of assay formats known to those of ordinary skill in the art for using a binding agent to detect polypeptide markers in a sample. *See, e.g.,* Harlow and Lane, *Antibodies: A Laboratory Manual*, Cold Spring Harbor Laboratory, 1988. In general, the presence or absence of a cancer in a patient may be determined by (a) contacting a biological sample obtained from a patient with a binding agent; (b) detecting in the sample a level of polypeptide that binds to the binding agent; and (c) comparing the level of polypeptide with a predetermined cut-off value.

In a preferred embodiment, the assay involves the use of binding agent immobilized on a solid support to bind to and remove the polypeptide from the remainder of the sample. The bound polypeptide may then be detected using a detection reagent that contains a reporter group and specifically binds to the binding agent/polypeptide complex. Such detection reagents may comprise, for example, a binding agent that specifically binds to the polypeptide or an antibody or other agent that specifically binds to the binding agent, such as an anti-immunoglobulin, protein G, protein A or a lectin. Alternatively, a competitive assay may be utilized, in which a polypeptide is labeled with a reporter group and allowed to bind to the immobilized binding agent after incubation of the binding agent with the sample. The extent to which components of the sample inhibit the binding of the labeled polypeptide to the binding agent is indicative of the reactivity of the sample with the immobilized binding agent. Suitable polypeptides for use within such assays include full length prostate tumor proteins and portions thereof to which the binding agent binds, as described above.

The solid support may be any material known to those of ordinary skill in the art to which the tumor protein may be attached. For example, the solid support may be a test well in a microtiter plate or a nitrocellulose or other suitable membrane. Alternatively, the support may be a bead or disc, such as glass, fiberglass, latex or a plastic material such as polystyrene or polyvinylchloride. The support may also be a magnetic particle or a fiber optic sensor, such as those disclosed, for example, in U.S. Patent No. 5,359,681. The binding agent may be immobilized on the solid support using a variety of techniques known to those of skill in the art, which are amply described in the patent and scientific literature. In the context of the present invention, the term "immobilization" refers to both noncovalent association, such as adsorption, and covalent attachment (which may be a direct linkage between the agent and functional groups on the support or may be a linkage by way of a cross-linking agent). Immobilization by adsorption to a well in a microtiter plate or to a membrane is preferred. In such cases, adsorption may be achieved by contacting the binding agent, in a suitable buffer, with the solid support for a suitable amount of time. The contact time varies with temperature, but is typically between about 1 hour and about 1 day. In general, contacting a well of a plastic microtiter plate (such as polystyrene or polyvinylchloride) with an amount of binding agent ranging from about 10 ng to about 10 μ g, and preferably about 100 ng to about 1 μ g, is sufficient to immobilize an adequate amount of binding agent.

Covalent attachment of binding agent to a solid support may generally be achieved by first reacting the support with a bifunctional reagent that will react with both the support and a functional group, such as a hydroxyl or amino group, on the binding agent. For example, the binding agent may be covalently attached to supports having an appropriate polymer coating using benzoquinone or by condensation of an aldehyde group on the support with an amine and an active hydrogen on the binding partner (*see, e.g.,* Pierce Immunotechnology Catalog and Handbook, 1991, at A12-A13).

In certain embodiments, the assay is a two-antibody sandwich assay. This assay may be performed by first contacting an antibody that has been immobilized

on a solid support, commonly the well of a microtiter plate, with the sample, such that polypeptides within the sample are allowed to bind to the immobilized antibody. Unbound sample is then removed from the immobilized polypeptide-antibody complexes and a detection reagent (preferably a second antibody capable of binding to a different site on the polypeptide) containing a reporter group is added. The amount of detection reagent that remains bound to the solid support is then determined using a method appropriate for the specific reporter group.

More specifically, once the antibody is immobilized on the support as described above, the remaining protein binding sites on the support are typically blocked. Any suitable blocking agent known to those of ordinary skill in the art, such as bovine serum albumin or Tween 20™ (Sigma Chemical Co., St. Louis, MO). The immobilized antibody is then incubated with the sample, and polypeptide is allowed to bind to the antibody. The sample may be diluted with a suitable diluent, such as phosphate-buffered saline (PBS) prior to incubation. In general, an appropriate contact time (*i.e.*, incubation time) is a period of time that is sufficient to detect the presence of polypeptide within a sample obtained from an individual with prostate cancer. Preferably, the contact time is sufficient to achieve a level of binding that is at least about 95% of that achieved at equilibrium between bound and unbound polypeptide. Those of ordinary skill in the art will recognize that the time necessary to achieve equilibrium may be readily determined by assaying the level of binding that occurs over a period of time. At room temperature, an incubation time of about 30 minutes is generally sufficient.

Unbound sample may then be removed by washing the solid support with an appropriate buffer, such as PBS containing 0.1% Tween 20™. The second antibody, which contains a reporter group, may then be added to the solid support. Preferred reporter groups include those groups recited above.

The detection reagent is then incubated with the immobilized antibody-polypeptide complex for an amount of time sufficient to detect the bound polypeptide. An appropriate amount of time may generally be determined by assaying the level of binding that occurs over a period of time. Unbound detection reagent is then removed

and bound detection reagent is detected using the reporter group. The method employed for detecting the reporter group depends upon the nature of the reporter group. For radioactive groups, scintillation counting or autoradiographic methods are generally appropriate. Spectroscopic methods may be used to detect dyes, luminescent groups and fluorescent groups. Biotin may be detected using avidin, coupled to a different reporter group (commonly a radioactive or fluorescent group or an enzyme). Enzyme reporter groups may generally be detected by the addition of substrate (generally for a specific period of time), followed by spectroscopic or other analysis of the reaction products.

To determine the presence or absence of a cancer, such as prostate cancer, the signal detected from the reporter group that remains bound to the solid support is generally compared to a signal that corresponds to a predetermined cut-off value. In one preferred embodiment, the cut-off value for the detection of a cancer is the average mean signal obtained when the immobilized antibody is incubated with samples from patients without the cancer. In general, a sample generating a signal that is three standard deviations above the predetermined cut-off value is considered positive for the cancer. In an alternate preferred embodiment, the cut-off value is determined using a Receiver Operator Curve, according to the method of Sackett et al., *Clinical Epidemiology: A Basic Science for Clinical Medicine*, Little Brown and Co., 1985, p. 106-7. Briefly, in this embodiment, the cut-off value may be determined from a plot of pairs of true positive rates (*i.e.*, sensitivity) and false positive rates (100%-specificity) that correspond to each possible cut-off value for the diagnostic test result. The cut-off value on the plot that is the closest to the upper left-hand corner (*i.e.*, the value that encloses the largest area) is the most accurate cut-off value, and a sample generating a signal that is higher than the cut-off value determined by this method may be considered positive. Alternatively, the cut-off value may be shifted to the left along the plot, to minimize the false positive rate, or to the right, to minimize the false negative rate. In general, a sample generating a signal that is higher than the cut-off value determined by this method is considered positive for a cancer.

In a related embodiment, the assay is performed in a flow-through or strip test format, wherein the binding agent is immobilized on a membrane, such as nitrocellulose. In the flow-through test, polypeptides within the sample bind to the immobilized binding agent as the sample passes through the membrane. A second, labeled binding agent then binds to the binding agent-polypeptide complex as a solution containing the second binding agent flows through the membrane. The detection of bound second binding agent may then be performed as described above. In the strip test format, one end of the membrane to which binding agent is bound is immersed in a solution containing the sample. The sample migrates along the membrane through a region containing second binding agent and to the area of immobilized binding agent. Concentration of second binding agent at the area of immobilized antibody indicates the presence of a cancer. Typically, the concentration of second binding agent at that site generates a pattern, such as a line, that can be read visually. The absence of such a pattern indicates a negative result. In general, the amount of binding agent immobilized on the membrane is selected to generate a visually discernible pattern when the biological sample contains a level of polypeptide that would be sufficient to generate a positive signal in the two-antibody sandwich assay, in the format discussed above. Preferred binding agents for use in such assays are antibodies and antigen-binding fragments thereof. Preferably, the amount of antibody immobilized on the membrane ranges from about 25 ng to about 1 μ g, and more preferably from about 50 ng to about 500 ng. Such tests can typically be performed with a very small amount of biological sample.

Of course, numerous other assay protocols exist that are suitable for use with the tumor proteins or binding agents of the present invention. The above descriptions are intended to be exemplary only. For example, it will be apparent to those of ordinary skill in the art that the above protocols may be readily modified to use prostate tumor polypeptides to detect antibodies that bind to such polypeptides in a biological sample. The detection of such prostate tumor protein specific antibodies may correlate with the presence of a cancer.

A cancer may also, or alternatively, be detected based on the presence of T cells that specifically react with a prostate tumor protein in a biological sample. Within certain methods, a biological sample comprising CD4⁺ and/or CD8⁺ T cells isolated from a patient is incubated with a prostate tumor polypeptide, a polynucleotide encoding such a polypeptide and/or an APC that expresses at least an immunogenic portion of such a polypeptide, and the presence or absence of specific activation of the T cells is detected. Suitable biological samples include, but are not limited to, isolated T cells. For example, T cells may be isolated from a patient by routine techniques (such as by Ficoll/Hypaque density gradient centrifugation of peripheral blood lymphocytes). T cells may be incubated *in vitro* for 2-9 days (typically 4 days) at 37°C with prostate tumor polypeptide (*e.g.*, 5 - 25 µg/ml). It may be desirable to incubate another aliquot of a T cell sample in the absence of prostate tumor polypeptide to serve as a control. For CD4⁺ T cells, activation is preferably detected by evaluating proliferation of the T cells. For CD8⁺ T cells, activation is preferably detected by evaluating cytolytic activity. A level of proliferation that is at least two fold greater and/or a level of cytolytic activity that is at least 20% greater than in disease-free patients indicates the presence of a cancer in the patient.

As noted above, a cancer may also, or alternatively, be detected based on the level of mRNA encoding a prostate tumor protein in a biological sample. For example, at least two oligonucleotide primers may be employed in a polymerase chain reaction (PCR) based assay to amplify a portion of a prostate tumor cDNA derived from a biological sample, wherein at least one of the oligonucleotide primers is specific for (*i.e.*, hybridizes to) a polynucleotide encoding the prostate tumor protein. The amplified cDNA is then separated and detected using techniques well known in the art, such as gel electrophoresis. Similarly, oligonucleotide probes that specifically hybridize to a polynucleotide encoding a prostate tumor protein may be used in a hybridization assay to detect the presence of polynucleotide encoding the tumor protein in a biological sample.

To permit hybridization under assay conditions, oligonucleotide primers and probes should comprise an oligonucleotide sequence that has at least about 60%,

preferably at least about 75% and more preferably at least about 90%, identity to a portion of a polynucleotide encoding a prostate tumor protein that is at least 10 nucleotides, and preferably at least 20 nucleotides, in length. Preferably, oligonucleotide primers and/or probes will hybridize to a polynucleotide encoding a polypeptide disclosed herein under moderately stringent conditions, as defined above. Oligonucleotide primers and/or probes which may be usefully employed in the diagnostic methods described herein preferably are at least 10-40 nucleotides in length. In a preferred embodiment, the oligonucleotide primers comprise at least 10 contiguous nucleotides, more preferably at least 15 contiguous nucleotides, of a DNA molecule having a sequence recited in SEQ ID NO: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375 and 381. Techniques for both PCR based assays and hybridization assays are well known in the art (*see, for example, Mullis et al., Cold Spring Harbor Symp. Quant. Biol., 51:263, 1987; Erlich ed., PCR Technology, Stockton Press, NY, 1989*).

One preferred assay employs RT-PCR, in which PCR is applied in conjunction with reverse transcription. Typically, RNA is extracted from a biological sample, such as biopsy tissue, and is reverse transcribed to produce cDNA molecules. PCR amplification using at least one specific primer generates a cDNA molecule, which may be separated and visualized using, for example, gel electrophoresis. Amplification may be performed on biological samples taken from a test patient and from an individual who is not afflicted with a cancer. The amplification reaction may be performed on several dilutions of cDNA spanning two orders of magnitude. A two-fold or greater increase in expression in several dilutions of the test patient sample as compared to the same dilutions of the non-cancerous sample is typically considered positive.

In another embodiment, the disclosed compositions may be used as markers for the progression of cancer. In this embodiment, assays as described above for the diagnosis of a cancer may be performed over time, and the change in the level of reactive polypeptide(s) or polynucleotide evaluated. For example, the assays may be performed every 24-72 hours for a period of 6 months to 1 year, and thereafter

performed as needed. In general, a cancer is progressing in those patients in whom the level of polypeptide or polynucleotide detected increases over time. In contrast, the cancer is not progressing when the level of reactive polypeptide or polynucleotide either remains constant or decreases with time.

Certain *in vivo* diagnostic assays may be performed directly on a tumor. One such assay involves contacting tumor cells with a binding agent. The bound binding agent may then be detected directly or indirectly via a reporter group. Such binding agents may also be used in histological applications. Alternatively, polynucleotide probes may be used within such applications.

As noted above, to improve sensitivity, multiple prostate tumor protein markers may be assayed within a given sample. It will be apparent that binding agents specific for different proteins provided herein may be combined within a single assay. Further, multiple primers or probes may be used concurrently. The selection of tumor protein markers may be based on routine experiments to determine combinations that results in optimal sensitivity. In addition, or alternatively, assays for tumor proteins provided herein may be combined with assays for other known tumor antigens.

DIAGNOSTIC KITS

The present invention further provides kits for use within any of the above diagnostic methods. Such kits typically comprise two or more components necessary for performing a diagnostic assay. Components may be compounds, reagents, containers and/or equipment. For example, one container within a kit may contain a monoclonal antibody or fragment thereof that specifically binds to a prostate tumor protein. Such antibodies or fragments may be provided attached to a support material, as described above. One or more additional containers may enclose elements, such as reagents or buffers, to be used in the assay. Such kits may also, or alternatively, contain a detection reagent as described above that contains a reporter group suitable for direct or indirect detection of antibody binding.

Alternatively, a kit may be designed to detect the level of mRNA encoding a prostate tumor protein in a biological sample. Such kits generally comprise

at least one oligonucleotide probe or primer, as described above, that hybridizes to a polynucleotide encoding a prostate tumor protein. Such an oligonucleotide may be used, for example, within a PCR or hybridization assay. Additional components that may be present within such kits include a second oligonucleotide and/or a diagnostic reagent or container to facilitate the detection of a polynucleotide encoding a prostate tumor protein.

The following Examples are offered by way of illustration and not by way of limitation.

EXAMPLES

EXAMPLE 1

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library was constructed from prostate tumor poly A⁺ RNA using a Superscript Plasmid System for cDNA Synthesis and Plasmid Cloning kit (BRL Life Technologies, Gaithersburg, MD 20897) following the manufacturer's protocol. Specifically, prostate tumor tissues were homogenized with polytron (Kinematica, Switzerland) and total RNA was extracted using Trizol reagent (BRL Life Technologies) as directed by the manufacturer. The poly A⁺ RNA was then purified using a Qiagen oligotex spin column mRNA purification kit (Qiagen, Santa Clarita, CA 91355) according to the manufacturer's protocol. First-strand cDNA was synthesized using the NotI/Oligo-dT18 primer. Double-stranded cDNA was synthesized, ligated with EcoRI/BAXI adaptors (Invitrogen, San Diego, CA) and digested with NotI. Following size fractionation with Chroma Spin-1000 columns (Clontech, Palo Alto, CA), the cDNA was ligated into the EcoRI/NotI site of pCDNA3.1 (Invitrogen) and transformed into ElectroMax *E. coli* DH10B cells (BRL Life Technologies) by electroporation.

Using the same procedure, a normal human pancreas cDNA expression library was prepared from a pool of six tissue specimens (Clontech). The cDNA libraries were characterized by determining the number of independent colonies, the percentage of clones that carried insert, the average insert size and by sequence analysis. The prostate tumor library contained 1.64×10^7 independent colonies, with 70% of clones having an insert and the average insert size being 1745 base pairs. The normal pancreas cDNA library contained 3.3×10^6 independent colonies, with 69% of clones

having inserts and the average insert size being 1120 base pairs. For both libraries, sequence analysis showed that the majority of clones had a full length cDNA sequence and were synthesized from mRNA, with minimal rRNA and mitochondrial DNA contamination.

cDNA library subtraction was performed using the above prostate tumor and normal pancreas cDNA libraries, as described by Hara *et al.* (*Blood*, 84:189-199, 1994) with some modifications. Specifically, a prostate tumor-specific subtracted cDNA library was generated as follows. Normal pancreas cDNA library (70 μ g) was digested with EcoRI, NotI, and SfuI, followed by a filling-in reaction with DNA polymerase Klenow fragment. After phenol-chloroform extraction and ethanol precipitation, the DNA was dissolved in 100 μ l of H₂O, heat-denatured and mixed with 100 μ l (100 μ g) of Photoprobe biotin (Vector Laboratories, Burlingame, CA). As recommended by the manufacturer, the resulting mixture was irradiated with a 270 W sunlamp on ice for 20 minutes. Additional Photoprobe biotin (50 μ l) was added and the biotinylation reaction was repeated. After extraction with butanol five times, the DNA was ethanol-precipitated and dissolved in 23 μ l H₂O to form the driver DNA.

To form the tracer DNA, 10 μ g prostate tumor cDNA library was digested with BamHI and XhoI, phenol chloroform extracted and passed through Chroma spin-400 columns (Clontech). Following ethanol precipitation, the tracer DNA was dissolved in 5 μ l H₂O. Tracer DNA was mixed with 15 μ l driver DNA and 20 μ l of 2 x hybridization buffer (1.5 M NaCl/10 mM EDTA/50 mM HEPES pH 7.5/0.2% sodium dodecyl sulfate), overlaid with mineral oil, and heat-denatured completely. The sample was immediately transferred into a 68 °C water bath and incubated for 20 hours (long hybridization [LH]). The reaction mixture was then subjected to a streptavidin treatment followed by phenol/chloroform extraction. This process was repeated three more times. Subtracted DNA was precipitated, dissolved in 12 μ l H₂O, mixed with 8 μ l driver DNA and 20 μ l of 2 x hybridization buffer, and subjected to a hybridization at 68 °C for 2 hours (short hybridization [SH]). After removal of biotinylated double-stranded DNA, subtracted cDNA was ligated into BamHI/XhoI site of chloramphenicol resistant pBCSK⁺ (Stratagene, La Jolla, CA 92037) and transformed into ElectroMax *E.*

coli DH10B cells by electroporation to generate a prostate tumor specific subtracted cDNA library (referred to as "prostate subtraction 1").

To analyze the subtracted cDNA library, plasmid DNA was prepared from 100 independent clones, randomly picked from the subtracted prostate tumor specific library and grouped based on insert size. Representative cDNA clones were further characterized by DNA sequencing with a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A (Foster City, CA). Six cDNA clones, hereinafter referred to as F1-13, F1-12, F1-16, H1-1, H1-9 and H1-4, were shown to be abundant in the subtracted prostate-specific cDNA library. The determined 3' and 5' cDNA sequences for F1-12 are provided in SEQ ID NO: 2 and 3, respectively, with determined 3' cDNA sequences for F1-13, F1-16, H1-1, H1-9 and H1-4 being provided in SEQ ID NO: 1 and 4-7, respectively.

The cDNA sequences for the isolated clones were compared to known sequences in the gene bank using the EMBL and GenBank databases (release 96). Four of the prostate tumor cDNA clones, F1-13, F1-16, H1-1, and H1-4, were determined to encode the following previously identified proteins: prostate specific antigen (PSA), human glandular kallikrein, human tumor expression enhanced gene, and mitochondria cytochrome C oxidase subunit II. H1-9 was found to be identical to a previously identified human autonomously replicating sequence. No significant homologies to the cDNA sequence for F1-12 were found.

Subsequent studies led to the isolation of a full-length cDNA sequence for F1-12. This sequence is provided in SEQ ID NO: 107, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 108.

To clone less abundant prostate tumor specific genes, cDNA library subtraction was performed by subtracting the prostate tumor cDNA library described above with the normal pancreas cDNA library and with the three most abundant genes in the previously subtracted prostate tumor specific cDNA library: human glandular kallikrein, prostate specific antigen (PSA), and mitochondria cytochrome C oxidase subunit II. Specifically, 1 μ g each of human glandular kallikrein, PSA and mitochondria cytochrome C oxidase subunit II cDNAs in pCDNA3.1 were added to the

driver DNA and subtraction was performed as described above to provide a second subtracted cDNA library hereinafter referred to as the "subtracted prostate tumor specific cDNA library with spike".

Twenty-two cDNA clones were isolated from the subtracted prostate tumor specific cDNA library with spike. The determined 3' and 5' cDNA sequences for the clones referred to as J1-17, L1-12, N1-1862, J1-13, J1-19, J1-25, J1-24, K1-58, K1-63, L1-4 and L1-14 are provided in SEQ ID NOS: 8-9, 10-11, 12-13, 14-15, 16-17, 18-19, 20-21, 22-23, 24-25, 26-27 and 28-29, respectively. The determined 3' cDNA sequences for the clones referred to as J1-12, J1-16, J1-21, K1-48, K1-55, L1-2, L1-6, N1-1858, N1-1860, N1-1861, N1-1864 are provided in SEQ ID NOS: 30-40, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to three of the five most abundant DNA species, (J1-17, L1-12 and N1-1862; SEQ ID NOS: 8-9, 10-11 and 12-13, respectively). Of the remaining two most abundant species, one (J1-12; SEQ ID NO:30) was found to be identical to the previously identified human pulmonary surfactant-associated protein, and the other (K1-48; SEQ ID NO:33) was determined to have some homology to *R. norvegicus* mRNA for 2-arylpropionyl-CoA epimerase. Of the 17 less abundant cDNA clones isolated from the subtracted prostate tumor specific cDNA library with spike, four (J1-16, K1-55, L1-6 and N1-1864; SEQ ID NOS:31, 34, 36 and 40, respectively) were found to be identical to previously identified sequences, two (J1-21 and N1-1860; SEQ ID NOS: 32 and 38, respectively) were found to show some homology to non-human sequences, and two (L1-2 and N1-1861; SEQ ID NOS: 35 and 39, respectively) were found to show some homology to known human sequences. No significant homologies were found to the polypeptides J1-13, J1-19, J1-24, J1-25, K1-58, K1-63, L1-4, L1-14 (SEQ ID NOS: 14-15, 16-17, 20-21, 18-19, 22-23, 24-25, 26-27, 28-29, respectively).

Subsequent studies led to the isolation of full length cDNA sequences for J1-17, L1-12 and N1-1862 (SEQ ID NOS: 109-111, respectively). The corresponding predicted amino acid sequences are provided in SEQ ID NOS: 112-114. L1-12 is also referred to as P501S.

In a further experiment, four additional clones were identified by subtracting a prostate tumor cDNA library with normal prostate cDNA prepared from a pool of three normal prostate poly A+ RNA (referred to as "prostate subtraction 2"). The determined cDNA sequences for these clones, hereinafter referred to as U1-3064, U1-3065, V1-3692 and 1A-3905, are provided in SEQ ID NO: 69-72, respectively. Comparison of the determined sequences with those in the gene bank revealed no significant homologies to U1-3065.

A second subtraction with spike (referred to as "prostate subtraction spike 2") was performed by subtracting a prostate tumor specific cDNA library with spike with normal pancreas cDNA library and further spiked with PSA, J1-17, pulmonary surfactant-associated protein, mitochondrial DNA, cytochrome c oxidase subunit II, N1-1862, autonomously replicating sequence, L1-12 and tumor expression enhanced gene. Four additional clones, hereinafter referred to as V1-3686, R1-2330, 1B-3976 and V1-3679, were isolated. The determined cDNA sequences for these clones are provided in SEQ ID NO:73-76, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to V1-3686 and R1-2330.

Further analysis of the three prostate subtractions described above (prostate subtraction 2, subtracted prostate tumor specific cDNA library with spike, and prostate subtraction spike 2) resulted in the identification of sixteen additional clones, referred to as 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1G-4734, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4810, 1I-4811, 1J-4876, 1K-4884 and 1K-4896. The determined cDNA sequences for these clones are provided in SEQ ID NOS: 77-92, respectively. Comparison of these sequences with those in the gene bank as described above, revealed no significant homologies to 1G-4741, 1G-4734, 1I-4807, 1J-4876 and 1K-4896 (SEQ ID NOS: 79, 81, 87, 90 and 92, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4736, 1G-4738, 1G-4741, 1G-4744, 1H-4774, 1H-4781, 1H-4785, 1H-4787, 1H-4796, 1I-4807, 1J-4876, 1K-4884 and 1K-4896, provided in SEQ ID NOS: 179-188 and 191-193,

respectively, and to the determination of additional partial cDNA sequences for 1I-4810 and 1I-4811, provided in SEQ ID NOS: 189 and 190, respectively.

Additional studies with prostate subtraction spike 2 resulted in the isolation of three more clones. Their sequences were determined as described above and compared to the most recent GenBank. All three clones were found to have homology to known genes, which are Cysteine-rich protein, KIAA0242, and KIAA0280 (SEQ ID NO: 317, 319, and 320, respectively). Further analysis of these clones by Synteni microarray (Synteni, Palo Alto, CA) demonstrated that all three clones were over-expressed in most prostate tumors and prostate BPH, as well as in the majority of normal prostate tissues tested, but low expression in all other normal tissues.

An additional subtraction was performed by subtracting a normal prostate cDNA library with normal pancreas cDNA (referred to as "prostate subtraction 3"). This led to the identification of six additional clones referred to as 1G-4761, 1G-4762, 1H-4766, 1H-4770, 1H-4771 and 1H-4772 (SEQ ID NOS: 93-98). Comparison of these sequences with those in the gene bank revealed no significant homologies to 1G-4761 and 1H-4771 (SEQ ID NOS: 93 and 97, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1G-4761, 1G-4762, 1H-4766 and 1H-4772 provided in SEQ ID NOS: 194-196 and 199, respectively, and to the determination of additional partial cDNA sequences for 1H-4770 and 1H-4771, provided in SEQ ID NOS: 197 and 198, respectively.

Subtraction of a prostate tumor cDNA library, prepared from a pool of polyA⁺ RNA from three prostate cancer patients, with a normal pancreas cDNA library (prostate subtraction 4) led to the identification of eight clones, referred to as 1D-4297, 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280 (SEQ ID NOS: 99-107). These sequences were compared to those in the gene bank as described above. No significant homologies were found to 1D-4283 and 1D-4304 (SEQ ID NOS: 103 and 104, respectively). Further analysis of the isolated clones led to the determination of extended cDNA sequences for 1D-4309, 1D-4278, 1D-4288, 1D-4283, 1D-4304, 1D-4296 and 1D-4280, provided in SEQ ID NOS: 200-206, respectively.

cDNA clones isolated in prostate subtraction 1 and prostate subtraction 2, described above, were colony PCR amplified and their mRNA expression levels in prostate tumor, normal prostate and in various other normal tissues were determined using microarray technology (Synteni, Palo Alto, CA). Briefly, the PCR amplification products were dotted onto slides in an array format, with each product occupying a unique location in the array. mRNA was extracted from the tissue sample to be tested, reverse transcribed, and fluorescent-labeled cDNA probes were generated. The microarrays were probed with the labeled cDNA probes, the slides scanned and fluorescence intensity was measured. This intensity correlates with the hybridization intensity. Two clones (referred to as P509S and P510S) were found to be over-expressed in prostate tumor and normal prostate and expressed at low levels in all other normal tissues tested (liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon). The determined cDNA sequences for P509S and P510S are provided in SEQ ID NO: 223 and 224, respectively. Comparison of these sequences with those in the gene bank as described above, revealed some homology to previously identified ESTs.

Additional, studies led to the isolation of the full-length cDNA sequence for P509S. This sequence is provided in SEQ ID NO: 332, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 339.

EXAMPLE 2

DETERMINATION OF TISSUE SPECIFICITY OF PROSTATE TUMOR POLYPEPTIDES

Using gene specific primers, mRNA expression levels for the representative prostate tumor polypeptides F1-16, H1-1, J1-17 (also referred to as P502S), L1-12 (also referred to as P501S), F1-12 (also referred to as P504S) and N1-1862 (also referred to as P503S) were examined in a variety of normal and tumor tissues using RT-PCR.

Briefly, total RNA was extracted from a variety of normal and tumor tissues using Trizol reagent as described above. First strand synthesis was carried out using 1-2 μ g of total RNA with SuperScript II reverse transcriptase (BRL Life Technologies) at 42 °C for one hour. The cDNA was then amplified by PCR with gene-specific primers. To ensure the semi-quantitative nature of the RT-PCR, β -actin was used as an internal control for each of the tissues examined. First, serial dilutions of the first strand cDNAs were prepared and RT-PCR assays were performed using β -actin specific primers. A dilution was then chosen that enabled the linear range amplification of the β -actin template and which was sensitive enough to reflect the differences in the initial copy numbers. Using these conditions, the β -actin levels were determined for each reverse transcription reaction from each tissue. DNA contamination was minimized by DNase treatment and by assuring a negative PCR result when using first strand cDNA that was prepared without adding reverse transcriptase.

mRNA Expression levels were examined in four different types of tumor tissue (prostate tumor from 2 patients, breast tumor from 3 patients, colon tumor, lung tumor), and sixteen different normal tissues, including prostate, colon, kidney, liver, lung, ovary, pancreas, skeletal muscle, skin, stomach, testes, bone marrow and brain. F1-16 was found to be expressed at high levels in prostate tumor tissue, colon tumor and normal prostate, and at lower levels in normal liver, skin and testes, with expression being undetectable in the other tissues examined. H1-1 was found to be expressed at high levels in prostate tumor, lung tumor, breast tumor, normal prostate, normal colon and normal brain, at much lower levels in normal lung, pancreas, skeletal muscle, skin, small intestine, bone marrow, and was not detected in the other tissues tested. J1-17 (P502S) and L1-12 (P501S) appear to be specifically over-expressed in prostate, with both genes being expressed at high levels in prostate tumor and normal prostate but at low to undetectable levels in all the other tissues examined. N1-1862 (P503S) was found to be over-expressed in 60% of prostate tumors and detectable in normal colon and kidney. The RT-PCR results thus indicate that F1-16, H1-1, J1-17 (P502S), N1-1862 (P503S) and L1-12 (P501S) are either prostate specific or are expressed at significantly elevated levels in prostate.

Further RT-PCR studies showed that F1-12 (P504S) is over-expressed in 60% of prostate tumors, detectable in normal kidney but not detectable in all other tissues tested. Similarly, R1-2330 was shown to be over-expressed in 40% of prostate tumors, detectable in normal kidney and liver, but not detectable in all other tissues tested. U1-3064 was found to be over-expressed in 60% of prostate tumors, and also expressed in breast and colon tumors, but was not detectable in normal tissues.

RT-PCR characterization of R1-2330, U1-3064 and 1D-4279 showed that these three antigens are over-expressed in prostate and/or prostate tumors.

Northern analysis with four prostate tumors, two normal prostate samples, two BPH prostates, and normal colon, kidney, liver, lung, pancreas, skeletal muscle, brain, stomach, testes, small intestine and bone marrow, showed that L1-12 (P501S) is over-expressed in prostate tumors and normal prostate, while being undetectable in other normal tissues tested. J1-17 (P502S) was detected in two prostate tumors and not in the other tissues tested. N1-1862 (P503S) was found to be over-expressed in three prostate tumors and to be expressed in normal prostate, colon and kidney, but not in other tissues tested. F1-12 (P504S) was found to be highly expressed in two prostate tumors and to be undetectable in all other tissues tested.

The microarray technology described above was used to determine the expression levels of representative antigens described herein in prostate tumor, breast tumor and the following normal tissues: prostate, liver, pancreas, skin, bone marrow, brain, breast, adrenal gland, bladder, testes, salivary gland, large intestine, kidney, ovary, lung, spinal cord, skeletal muscle and colon. L1-12 (P501S) was found to be over-expressed in normal prostate and prostate tumor, with some expression being detected in normal skeletal muscle. Both J1-12 and F1-12 (P504S) were found to be over-expressed in prostate tumor, with expression being lower or undetectable in all other tissues tested. N1-1862 (P503S) was found to be expressed at high levels in prostate tumor and normal prostate, and at low levels in normal large intestine and normal colon, with expression being undetectable in all other tissues tested. R1-2330 was found to be over-expressed in prostate tumor and normal prostate, and to be expressed at lower levels in all other tissues tested. 1D-4279 was found to be over-

expressed in prostate tumor and normal prostate, expressed at lower levels in normal spinal cord, and to be undetectable in all other tissues tested.

Further microarray analysis to specifically address the extent to which P501S (SEQ ID NO: 110) was expressed in breast tumor revealed moderate over-expression not only in breast tumor, but also in metastatic breast tumor (2/31), with negligible to low expression in normal tissues. This data suggests that P501S may be over-expressed in various breast tumors as well as in prostate tumors.

The expression levels of 32 ESTs (expressed sequence tags) described by Vasmatzis *et al.* (*Proc. Natl. Acad. Sci. USA* 95:300-304, 1998) in a variety of tumor and normal tissues were examined by microarray technology as described above. Two of these clones (referred to as P1000C and P1001C) were found to be over-expressed in prostate tumor and normal prostate, and expressed at low to undetectable levels in all other tissues tested (normal aorta, thymus, resting and activated PBMC, epithelial cells, spinal cord, adrenal gland, fetal tissues, skin, salivary gland, large intestine, bone marrow, liver, lung, dendritic cells, stomach, lymph nodes, brain, heart, small intestine, skeletal muscle, colon and kidney. The determined cDNA sequences for P1000C and P1001C are provided in SEQ ID NO: 384 and 472, respectively. The sequence of P1001C was found to show some homology to the previously isolated Human mRNA for JM27 protein. No significant homologies were found to the sequence of P1000C.

The expression of the polypeptide encoded by the full length cDNA sequence for F1-12 (also referred to as P504S; SEQ ID NO: 108) was investigated by immunohistochemical analysis. Rabbit-anti-P504S polyclonal antibodies were generated against the full length P504S protein by standard techniques. Subsequent isolation and characterization of the polyclonal antibodies were also performed by techniques well known in the art. Immunohistochemical analysis showed that the P504S polypeptide was expressed in 100% of prostate carcinoma samples tested (n=5).

The rabbit-anti-P504S polyclonal antibody did not appear to label benign prostate cells with the same cytoplasmic granular staining, but rather with light nuclear staining. Analysis of normal tissues revealed that the encoded polypeptide was found to be expressed in some, but not all normal human tissues. Positive

cytoplasmic staining with rabbit-anti-P504S polyclonal antibody was found in normal human kidney, liver, brain, colon and lung-associated macrophages, whereas heart and bone marrow were negative.

This data indicates that the P504S polypeptide is present in prostate cancer tissues, and that there are qualitative and quantitative differences in the staining between benign prostatic hyperplasia tissues and prostate cancer tissues, suggesting that this polypeptide may be detected selectively in prostate tumors and therefore be useful in the diagnosis of prostate cancer.

EXAMPLE 3

ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA subtraction library, containing cDNA from normal prostate subtracted with ten other normal tissue cDNAs (brain, heart, kidney, liver, lung, ovary, placenta, skeletal muscle, spleen and thymus) and then submitted to a first round of PCR amplification, was purchased from Clontech. This library was subjected to a second round of PCR amplification, following the manufacturer's protocol. The resulting cDNA fragments were subcloned into the vector pT7 Blue T-vector (Novagen, Madison, WI) and transformed into XL-1 Blue MRF' *E. coli* (Stratagene). DNA was isolated from independent clones and sequenced using a Perkin Elmer/Applied Biosystems Division Automated Sequencer Model 373A.

Fifty-nine positive clones were sequenced. Comparison of the DNA sequences of these clones with those in the gene bank, as described above, revealed no significant homologies to 25 of these clones, hereinafter referred to as P5, P8, P9, P18, P20, P30, P34, P36, P38, P39, P42, P49, P50, P53, P55, P60, P64, P65, P73, P75, P76, P79 and P84. The determined cDNA sequences for these clones are provided in SEQ ID NO: 41-45, 47-52 and 54-65, respectively. P29, P47, P68, P80 and P82 (SEQ ID NO: 46, 53 and 66-68, respectively) were found to show some degree of homology to

previously identified DNA sequences. To the best of the inventors' knowledge, none of these sequences have been previously shown to be present in prostate.

Further studies using the PCR-based methodology described above resulted in the isolation of more than 180 additional clones, of which 23 clones were found to show no significant homologies to known sequences. The determined cDNA sequences for these clones are provided in SEQ ID NO: 115-123, 127, 131, 137, 145, 147-151, 153, 156-158 and 160. Twenty-three clones (SEQ ID NO: 124-126, 128-130, 132-136, 138-144, 146, 152, 154, 155 and 159) were found to show some homology to previously identified ESTs. An additional ten clones (SEQ ID NO: 161-170) were found to have some degree of homology to known genes. Larger cDNA clones containing the P20 sequence represent splice variants of a gene referred to as P703P. The determined DNA sequence for the variants referred to as DE1, DE13 and DE14 are provided in SEQ ID NOS: 171, 175 and 177, respectively, with the corresponding predicted amino acid sequences being provided in SEQ ID NO: 172, 176 and 178, respectively. The determined cDNA sequence for an extended spliced form of P703 is provided in SEQ ID NO: 225. The DNA sequences for the splice variants referred to as DE2 and DE6 are provided in SEQ ID NOS: 173 and 174, respectively.

mRNA Expression levels for representative clones in tumor tissues (prostate (n=5), breast (n=2), colon and lung) normal tissues (prostate (n=5), colon, kidney, liver, lung (n=2), ovary (n=2), skeletal muscle, skin, stomach, small intestine and brain), and activated and non-activated PBMC was determined by RT-PCR as described above. Expression was examined in one sample of each tissue type unless otherwise indicated.

P9 was found to be highly expressed in normal prostate and prostate tumor compared to all normal tissues tested except for normal colon which showed comparable expression. P20, a portion of the P703P gene, was found to be highly expressed in normal prostate and prostate tumor, compared to all twelve normal tissues tested. A modest increase in expression of P20 in breast tumor (n=2), colon tumor and lung tumor was seen compared to all normal tissues except lung (1 of 2). Increased expression of P18 was found in normal prostate, prostate tumor and breast tumor

compared to other normal tissues except lung and stomach. A modest increase in expression of P5 was observed in normal prostate compared to most other normal tissues. However, some elevated expression was seen in normal lung and PBMC. Elevated expression of P5 was also observed in prostate tumors (2 of 5), breast tumor and one lung tumor sample. For P30, similar expression levels were seen in normal prostate and prostate tumor, compared to six of twelve other normal tissues tested. Increased expression was seen in breast tumors, one lung tumor sample and one colon tumor sample, and also in normal PBMC. P29 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to the majority of normal tissues. However, substantial expression of P29 was observed in normal colon and normal lung (2 of 2). P80 was found to be over-expressed in prostate tumor (5 of 5) and normal prostate (5 of 5) compared to all other normal tissues tested, with increased expression also being seen in colon tumor.

Further studies resulted in the isolation of twelve additional clones, hereinafter referred to as 10-d8, 10-h10, 11-c8, 7-g6, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3, 8-h11, 9-f12 and 9-f3. The determined DNA sequences for 10-d8, 10-h10, 11-c8, 8-d4, 8-d9, 8-h11, 9-f12 and 9-f3 are provided in SEQ ID NO: 207, 208, 209, 216, 217, 220, 221 and 222, respectively. The determined forward and reverse DNA sequences for 7-g6, 8-b5, 8-b6 and 8-g3 are provided in SEQ ID NO: 210 and 211; 212 and 213; 214 and 215; and 218 and 219, respectively. Comparison of these sequences with those in the gene bank revealed no significant homologies to the sequence of 9-f3. The clones 10-d8, 11-c8 and 8-h11 were found to show some homology to previously isolated ESTs, while 10-h10, 8-b5, 8-b6, 8-d4, 8-d9, 8-g3 and 9-f12 were found to show some homology to previously identified genes. Further characterization of 7-G6 and 8-G3 showed identity to the known genes PAP and PSA, respectively.

mRNA expression levels for these clones were determined using the micro-array technology described above. The clones 7-G6, 8-G3, 8-B5, 8-B6, 8-D4, 8-D9, 9-F3, 9-F12, 9-H3, 10-A2, 10-A4, 11-C9 and 11-F2 were found to be over-expressed in prostate tumor and normal prostate, with expression in other tissues tested being low or undetectable. Increased expression of 8-F11 was seen in prostate tumor

and normal prostate, bladder, skeletal muscle and colon. Increased expression of 10-H10 was seen in prostate tumor and normal prostate, bladder, lung, colon, brain and large intestine. Increased expression of 9-B1 was seen in prostate tumor, breast tumor, and normal prostate, salivary gland, large intestine and skin, with increased expression of 11-C8 being seen in prostate tumor, and normal prostate and large intestine.

An additional cDNA fragment derived from the PCR-based normal prostate subtraction, described above, was found to be prostate specific by both microarray technology and RT-PCR. The determined cDNA sequence of this clone (referred to as 9-A11) is provided in SEQ ID NO: 226. Comparison of this sequence with those in the public databases revealed 99% identity to the known gene HOXB13.

Further studies led to the isolation of the clones 8-C6 and 8-H7. The determined cDNA sequences for these clones are provided in SEQ ID NO: 227 and 228, respectively. These sequences were found to show some homology to previously isolated ESTs.

PCR and hybridization-based methodologies were employed to obtain longer cDNA sequences for clone P20 (also referred to as P703P), yielding three additional cDNA fragments that progressively extend the 5' end of the gene. These fragments, referred to as P703PDE5, P703P6.26, and P703PX-23 (SEQ ID NO: 326, 328 and 330, with the predicted corresponding amino acid sequences being provided in SEQ ID NO: 327, 329 and 331, respectively) contain additional 5' sequence. P703PDE5 was recovered by screening of a cDNA library (#141-26) with a portion of P703P as a probe. P703P6.26 was recovered from a mixture of three prostate tumor cDNAs and P703PX_23 was recovered from cDNA library (#438-48). Together, the additional sequences include all of the putative mature serine protease along with part of the putative signal sequence. Further studies using a PCR-based subtraction library of a prostate tumor pool subtracted against a pool of normal tissues (referred to as JP: PCR subtraction) resulted in the isolation of thirteen additional clones, seven of which did not share any significant homology to known GenBank sequences. The determined cDNA sequences for these seven clones (P711P, P712P, novel 23, P774P, P775P, P710P and P768P) are provided in SEQ ID NO: 307-311, 313 and 315, respectively.

The remaining six clones (SEQ ID NO: 316 and 321-325) were shown to share some homology to known genes. By microarray analysis, all thirteen clones showed three or more fold over-expression in prostate tissues, including prostate tumors, BPH and normal prostate as compared to normal non-prostate tissues. Clones P711P, P712P, novel 23 and P768P showed over-expression in most prostate tumors and BPH tissues tested (n=29), and in the majority of normal prostate tissues (n=4), but background to low expression levels in all normal tissues. Clones P774P, P775P and P710P showed comparatively lower expression and expression in fewer prostate tumors and BPH samples, with negative to low expression in normal prostate.

The full-length cDNA for P711P was obtained by employing the partial sequence of SEQ ID NO: 307 to screen a prostate cDNA library. Specifically, a directionally cloned prostate cDNA library was prepared using standard techniques. One million colonies of this library were plated onto LB/Amp plates. Nylon membrane filters were used to lift these colonies, and the cDNAs which were picked up by these filters were denatured and cross-linked to the filters by UV light. The P711P cDNA fragment of SEQ ID NO: 307 was radio-labeled and used to hybridize with these filters. Positive clones were selected, and cDNAs were prepared and sequenced using an automatic Perkin Elmer/Applied Biosystems sequencer. The determined full-length sequence of P711P is provided in SEQ ID NO: 382, with the corresponding predicted amino acid sequence being provided in SEQ ID NO: 383.

Using PCR and hybridization-based methodologies, additional cDNA sequence information was derived for two clones described above, 11-C9 and 9-F3, herein after referred to as P707P and P714P, respectively (SEQ ID NO: 333 and 334). After comparison with the most recent GenBank, P707P was found to be a splice variant of the known gene HoxB13. In contrast, no significant homologies to P714P were found.

Clones 8-B3, P89, P98, P130 and P201 (as disclosed in U.S. Patent Application No. 09/020,956, filed February 9, 1998) were found to be contained within one contiguous sequence, referred to as P705P (SEQ ID NO: 335, with the predicted

amino acid sequence provided in SEQ ID NO: 336), which was determined to be a splice variant of the known gene NKX 3.1.

EXAMPLE 4

SYNTHESIS OF POLYPEPTIDES

Polypeptides may be synthesized on a Perkin Elmer/Applied Biosystems 430A peptide synthesizer using Fmoc chemistry with HPTU (O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate) activation. A Gly-Cys-Gly sequence may be attached to the amino terminus of the peptide to provide a method of conjugation, binding to an immobilized surface, or labeling of the peptide. Cleavage of the peptides from the solid support may be carried out using the following cleavage mixture: trifluoroacetic acid:ethanedithiol:thioanisole:water:phenol (40:1:2:2:3). After cleaving for 2 hours, the peptides may be precipitated in cold methyl-t-butyl-ether. The peptide pellets may then be dissolved in water containing 0.1% trifluoroacetic acid (TFA) and lyophilized prior to purification by C18 reverse phase HPLC. A gradient of 0%-60% acetonitrile (containing 0.1% TFA) in water (containing 0.1% TFA) may be used to elute the peptides. Following lyophilization of the pure fractions, the peptides may be characterized using electrospray or other types of mass spectrometry and by amino acid analysis.

EXAMPLE 5

FURTHER ISOLATION AND CHARACTERIZATION OF PROSTATE TUMOR POLYPEPTIDES BY PCR-BASED SUBTRACTION

A cDNA library generated from prostate primary tumor mRNA as described above was subtracted with cDNA from normal prostate. The subtraction was performed using a PCR-based protocol (Clontech), which was modified to generate larger fragments. Within this protocol, tester and driver double stranded cDNA were

separately digested with five restriction enzymes that recognize six-nucleotide restriction sites (MluI, MscI, PvuII, SalI and StuI). This digestion resulted in an average cDNA size of 600 bp, rather than the average size of 300 bp that results from digestion with RsaI according to the Clontech protocol. This modification did not affect the subtraction efficiency. Two tester populations were then created with different adapters, and the driver library remained without adapters.

The tester and driver libraries were then hybridized using excess driver cDNA. In the first hybridization step, driver was separately hybridized with each of the two tester cDNA populations. This resulted in populations of (a) unhybridized tester cDNAs, (b) tester cDNAs hybridized to other tester cDNAs, (c) tester cDNAs hybridized to driver cDNAs and (d) unhybridized driver cDNAs. The two separate hybridization reactions were then combined, and rehybridized in the presence of additional denatured driver cDNA. Following this second hybridization, in addition to populations (a) through (d), a fifth population (e) was generated in which tester cDNA with one adapter hybridized to tester cDNA with the second adapter. Accordingly, the second hybridization step resulted in enrichment of differentially expressed sequences which could be used as templates for PCR amplification with adaptor-specific primers.

The ends were then filled in, and PCR amplification was performed using adaptor-specific primers. Only population (e), which contained tester cDNA that did not hybridize to driver cDNA, was amplified exponentially. A second PCR amplification step was then performed, to reduce background and further enrich differentially expressed sequences.

This PCR-based subtraction technique normalizes differentially expressed cDNAs so that rare transcripts that are overexpressed in prostate tumor tissue may be recoverable. Such transcripts would be difficult to recover by traditional subtraction methods.

In addition to genes known to be overexpressed in prostate tumor, seventy-seven further clones were identified. Sequences of these partial cDNAs are provided in SEQ ID NO: 29 to 305. Most of these clones had no significant homology to database sequences. Exceptions were JPTPN23 (SEQ ID NO: 231; similarity to pig

valosin-containing protein), JPTPN30 (SEQ ID NO: 234; similarity to rat mRNA for proteasome subunit), JPTPN45 (SEQ ID NO: 243; similarity to rat *norvegicus* cytosolic NADP-dependent isocitrate dehydrogenase), JPTPN46 (SEQ ID NO: 244; similarity to human subclone H8 4 d4 DNA sequence), JP1D6 (SEQ ID NO: 265; similarity to *G. gallus* dynein light chain-A), JP8D6 (SEQ ID NO: 288; similarity to human BAC clone RG016J04), JP8F5 (SEQ ID NO: 289; similarity to human subclone H8 3 b5 DNA sequence), and JP8E9 (SEQ ID NO: 299; similarity to human Alu sequence).

Additional studies using the PCR-based subtraction library consisting of a prostate tumor pool subtracted against a normal prostate pool (referred to as PT-PN PCR subtraction) yielded three additional clones. Comparison of the cDNA sequences of these clones with the most recent release of GenBank revealed no significant homologies to the two clones referred to as P715P and P767P (SEQ ID NO: 312 and 314). The remaining clone was found to show some homology to the known gene KIAA0056 (SEQ ID NO: 318). Using microarray analysis to measure mRNA expression levels in various tissues, all three clones were found to be over-expressed in prostate tumors and BPH tissues. Specifically, clone P715P was over-expressed in most prostate tumors and BPH tissues by a factor of three or greater, with elevated expression seen in the majority of normal prostate samples and in fetal tissue, but negative to low expression in all other normal tissues. Clone P767P was over-expressed in several prostate tumors and BPH tissues, with moderate expression levels in half of the normal prostate samples, and background to low expression in all other normal tissues tested.

Further analysis, by microarray as described above, of the PT-PN PCR subtraction library and of a DNA subtraction library containing cDNA from prostate tumor subtracted with a pool of normal tissue cDNAs, led to the isolation of 27 additional clones (SEQ ID NO: 340-365 and 381) which were determined to be over-expressed in prostate tumor. The clones of SEQ ID NO: 341, 342, 345, 347, 348, 349, 351, 355-359, 361, 362 and 364 were also found to be expressed in normal prostate. Expression of all 26 clones in a variety of normal tissues was found to be low or undetectable, with the exception of P544S (SEQ ID NO: 356) which was found to be

expressed in small intestine. Of the 26 clones, 10 (SEQ ID NO: 340-349) were found to show some homology to previously identified sequences. No significant homologies were found to the clones of SEQ ID NO: 350-365.

EXAMPLE 6

PEPTIDE PRIMING OF MICE AND PROPAGATION OF CTL LINES

6.1. This Example illustrates the preparation of a CTL cell line specific for cells expressing the P502S gene.

Mice expressing the transgene for human HLA A2.1 (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with P2S#12 peptide (VLGWVAEL; SEQ ID NO: 306), which is derived from the P502S gene (also referred to herein as J1-17, SEQ ID NO: 8), as described by Theobald et al., *Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995 with the following modifications. Mice were immunized with 100µg of P2S#12 and 120µg of an I-A^b binding peptide derived from hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and using a nylon mesh single cell suspensions prepared. Cells were then resuspended at 6×10^6 cells/ml in complete media (RPMI-1640; Gibco BRL, Gaithersburg, MD) containing 10% FCS, 2mM Glutamine (Gibco BRL), sodium pyruvate (Gibco BRL), non-essential amino acids (Gibco BRL), 2×10^{-5} M 2-mercaptoethanol, 50U/ml penicillin and streptomycin, and cultured in the presence of irradiated (3000 rads) P2S#12-pulsed (5mg/ml P2S#12 and 10mg/ml β2-microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of 7µg/ml dextran sulfate and 25µg/ml LPS for 3 days). Six days later, cells (5×10^5 /ml) were restimulated with 2.5×10^6 /ml peptide pulsed irradiated (20,000 rads) EL4A2Kb cells (Sherman et al, *Science* 258:815-818, 1992) and 3×10^6 /ml A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20U/ml IL-2. Cells continued to be restimulated on a weekly basis as described, in preparation for cloning the line.

P2S#12 line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells

as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, clones that were growing were isolated and maintained in culture. Several of these clones demonstrated significantly higher reactivity (lysis) against human fibroblasts (HLA A2.1 expressing) transduced with P502S than against control fibroblasts. An example is presented in Figure 1.

This data indicates that P2S #12 represents a naturally processed epitope of the P502S protein that is expressed in the context of the human HLA A2.1 molecule.

6.2. This Example illustrates the preparation of murine CTL lines and CTL clones specific for cells expressing the P501S gene.

This series of experiments were performed similarly to that described above. Mice were immunized with the P1S#10 peptide (SEQ ID NO: 337), which is derived from the P501S gene (also referred to herein as L1-12, SEQ ID NO: 110). The P1S#10 peptide was derived by analysis of the predicted polypeptide sequence for P501S for potential HLA-A2 binding sequences as defined by published HLA-A2 binding motifs (Parker, KC, *et al*, *J. Immunol.*, 152:163, 1994). P1S#10 peptide was synthesized as described in Example 4, and empirically tested for HLA-A2 binding using a T cell based competition assay. Predicted A2 binding peptides were tested for their ability to compete HLA-A2 specific peptide presentation to an HLA-A2 restricted CTL clone (D150M58), which is specific for the HLA-A2 binding influenza matrix peptide fluM58. D150M58 CTL secretes TNF in response to self-presentation of peptide fluM58. In the competition assay, test peptides at 100-200 $\mu\text{g/ml}$ were added to cultures of D150M58 CTL in order to bind HLA-A2 on the CTL. After thirty minutes, CTL cultured with test peptides, or control peptides, were tested for their antigen dose response to the fluM58 peptide in a standard TNF bioassay. As shown in Figure 3, peptide P1S#10 competes HLA-A2 restricted presentation of fluM58, demonstrating that peptide P1S#10 binds HLA-A2.

Mice expressing the transgene for human HLA A2.1 were immunized as described by Theobald et al. (*Proc. Natl. Acad. Sci. USA* 92:11993-11997, 1995) with the following modifications. Mice were immunized with 62.5 μg of P1S #10 and 120 μg

of an I-A^b binding peptide derived from Hepatitis B Virus protein emulsified in incomplete Freund's adjuvant. Three weeks later these mice were sacrificed and single cell suspensions prepared using a nylon mesh. Cells were then resuspended at 6×10^6 cells/ml in complete media (as described above) and cultured in the presence of irradiated (3000 rads) P1S#10-pulsed ($2\mu\text{g/ml}$ P1S#10 and 10mg/ml $\beta 2$ -microglobulin) LPS blasts (A2 transgenic spleens cells cultured in the presence of $7\mu\text{g/ml}$ dextran sulfate and $25\mu\text{g/ml}$ LPS for 3 days). Six days later cells ($5 \times 10^5/\text{ml}$) were restimulated with $2.5 \times 10^6/\text{ml}$ peptide-pulsed irradiated (20,000 rads) EL4A2Kb cells, as described above, and $3 \times 10^6/\text{ml}$ A2 transgenic spleen feeder cells. Cells were cultured in the presence of 20 U/ml IL-2. Cells were restimulated on a weekly basis in preparation for cloning. After three rounds of *in vitro* stimulations, one line was generated that recognized P1S#10-pulsed Jurkat A2Kb targets and P501S-transduced Jurkat targets as shown in Figure 4.

A P1S#10-specific CTL line was cloned by limiting dilution analysis with peptide pulsed EL4 A2Kb tumor cells (1×10^4 cells/ well) as stimulators and A2 transgenic spleen cells as feeders (5×10^5 cells/ well) grown in the presence of 30U/ml IL-2. On day 14, cells were restimulated as before. On day 21, viable clones were isolated and maintained in culture. As shown in Figure 5, five of these clones demonstrated specific cytolytic reactivity against P501S-transduced Jurkat A2Kb targets. This data indicates that P1S#10 represents a naturally processed epitope of the P501S protein that is expressed in the context of the human HLA-A2.1 molecule.

EXAMPLE 7

ABILITY OF HUMAN T CELLS TO RECOGNIZE PROSTATE TUMOR POLYPEPTIDES

This Example illustrates the ability of T cells specific for a prostate tumor polypeptide to recognize human tumor.

Human CD8⁺ T cells were primed *in vitro* to the P2S-12 peptide (SEQ ID NO: 306) derived from P502S (also referred to as J1-17) using dendritic cells according to the protocol of Van Tsai et al. (*Critical Reviews in Immunology* 18:65-75, 1998). The resulting CD8⁺ T cell microcultures were tested for their ability to recognize the P2S-12 peptide presented by autologous fibroblasts or fibroblasts which were transduced to express the P502S gene in a γ -interferon ELISPOT assay (*see* Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). Briefly, titrating numbers of T cells were assayed in duplicate on 10⁴ fibroblasts in the presence of 3 μ g/ml human β_2 -microglobulin and 1 μ g/ml P2S-12 peptide or control E75 peptide. In addition, T cells were simultaneously assayed on autologous fibroblasts transduced with the P502S gene or as a control, fibroblasts transduced with HER-2/*neu*. Prior to the assay, the fibroblasts were treated with 10 ng/ml γ -interferon for 48 hours to upregulate class I MHC expression. One of the microcultures (#5) demonstrated strong recognition of both peptide pulsed fibroblasts as well as transduced fibroblasts in a γ -interferon ELISPOT assay. Figure 2A demonstrates that there was a strong increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts pulsed with the P2S-12 peptide (solid bars) but not with the control E75 peptide (open bars). This shows the ability of these T cells to specifically recognize the P2S-12 peptide. As shown in Figure 2B, this microculture also demonstrated an increase in the number of γ -interferon spots with increasing numbers of T cells on fibroblasts transduced to express the P502S gene but not the HER-2/*neu* gene. These results provide additional confirmatory evidence that the P2S-12 peptide is a naturally processed epitope of the P502S protein. Furthermore, this also demonstrates that there exists in the human T cell repertoire, high affinity T cells which are capable of recognizing this epitope. These T cells should also be capable of recognizing human tumors which express the P502S gene.

EXAMPLE 8

PRIMING OF CTL *IN VIVO* USING NAKED DNA IMMUNIZATION WITH A PROSTATE ANTIGEN

The prostate tumor antigen L1-12, as described above, is also referred to as P501S. HLA A2Kb Tg mice (provided by Dr L. Sherman, The Scripps Research Institute, La Jolla, CA) were immunized with 100 µg VR10132-P501S either intramuscularly or intradermally. The mice were immunized three times, with a two week interval between immunizations. Two weeks after the last immunization, immune spleen cells were cultured with Jurkat A2Kb-P501S transduced stimulator cells. CTL lines were stimulated weekly. After two weeks of *in vitro* stimulation, CTL activity was assessed against P501S transduced targets. Two out of 8 mice developed strong anti-P501S CTL responses. These results demonstrate that P501S contains at least one naturally processed A2-restricted CTL epitope.

EXAMPLE 9

GENERATION OF HUMAN CTL *IN VITRO* USING WHOLE GENE PRIMING AND STIMULATION TECHNIQUES WITH PROSTATE TUMOR ANTIGEN

Using *in vitro* whole-gene priming with P501S-retrovirally transduced autologous fibroblasts (see, for example, Yee et al, *The Journal of Immunology*, 157(9):4079-86, 1996), human CTL lines were derived that specifically recognize autologous fibroblasts transduced with P501S (also known as L1-12), as determined by interferon-γ ELISPOT analysis as described above. Using a panel of HLA-mismatched fibroblast lines transduced with P501S, these CTL lines were shown to be restricted HLA-A2 class I allele. Specifically, dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by growing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, DC were infected overnight with recombinant P501S vaccinia virus at a multiplicity of infection (M.O.I) of five, and matured

overnight by the addition of 3 µg/ml CD40 ligand. Virus was inactivated by UV irradiation. CD8+ T cells were isolated using a magnetic bead system, and priming cultures were initiated using standard culture techniques. Cultures were restimulated every 7-10 days using autologous primary fibroblasts retrovirally transduced with P501S. Following four stimulation cycles, CD8+ T cell lines were identified that specifically produced interferon-γ when stimulated with P501S-transduced autologous fibroblasts. The P501S-specific activity could be sustained by the continued stimulation of the cultures with P501S-transduced fibroblasts in the presence of IL-15. A panel of HLA-mismatched fibroblast lines transduced with P501S were generated to define the restriction allele of the response. By measuring interferon-γ in an ELISPOT assay, the P501S specific response was shown to be restricted by HLA-A2. These results demonstrate that a CD8+ CTL response to P501S can be elicited.

EXAMPLE 10

IDENTIFICATION OF A NATURALLY PROCESSED CTL EPITOPE CONTAINED WITHIN A PROSTATE TUMOR ANTIGEN

The 9-mer peptide p5 (SEQ ID NO: 338) was derived from the P703P antigen (also referred to as P20). The p5 peptide is immunogenic in human HLA-A2 donors and is a naturally processed epitope. Antigen specific CD8+ T cells can be primed following repeated *in vitro* stimulations with monocytes pulsed with p5 peptide. These CTL specifically recognize p5-pulsed target cells in both ELISPOT (as described above) and chromium release assays. Additionally, immunization of HLA-A2 transgenic mice with p5 leads to the generation of CTL lines which recognize a variety of P703P transduced target cells expressing either HLA-A2Kb or HLA-A2. Specifically, HLA-A2 transgenic mice were immunized subcutaneously in the footpad with 100 µg of p5 peptide together with 140 µg of hepatitis B virus core peptide (a Th peptide) in Freund's incomplete adjuvant. Three weeks post immunization, spleen cells from immunized mice were stimulated *in vitro* with peptide-pulsed LPS blasts. CTL activity was assessed by chromium release assay five days after primary *in vitro*

stimulation. Retrovirally transduced cells expressing the control antigen P703P and HLA-A2Kb were used as targets. CTL lines that specifically recognized both p5-pulsed targets as well as P703P-expressing targets were identified.

Human *in vitro* priming experiments demonstrated that the p5 peptide is immunogenic in humans. Dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal human donors by culturing for five days in RPMI medium containing 10% human serum, 50 ng/ml human GM-CSF and 30 ng/ml human IL-4. Following culture, the DC were pulsed with p5 peptide and cultured with GM-CSF and IL-4 together with CD8+ T cell enriched PBMC. CTL lines were restimulated on a weekly basis with p5-pulsed monocytes. Five to six weeks after initiation of the CTL cultures, CTL recognition of p5-pulsed target cells was demonstrated.

EXAMPLE 11

EXPRESSION OF A BREAST TUMOR-DERIVED ANTIGEN IN PROSTATE

Isolation of the antigen B305D from breast tumor by differential display is described in US Patent Application No. 08/700,014, filed August 20, 1996. Several different splice forms of this antigen were isolated. The determined cDNA sequences for these splice forms are provided in SEQ ID NO: 366-375, with the predicted amino acid sequences corresponding to the sequences of SEQ ID NO: 292, 298 and 301-303 being provided in SEQ ID NO: 299-306, respectively.

The expression levels of B305D in a variety of tumor and normal tissues were examined by real time PCR and by Northern analysis. The results indicated that B305D is highly expressed in breast tumor, prostate tumor, normal prostate tumor and normal testes, with expression being low or undetectable in all other tissues examined (colon tumor, lung tumor, ovary tumor, and normal bone marrow, colon, kidney, liver, lung, ovary, skin, small intestine, stomach).

EXAMPLE 12

ELICITATION OF PROSTATE TUMOR ANTIGEN-SPECIFIC CTL RESPONSES IN HUMAN BLOOD

This Example illustrates the ability of a prostate tumor antigen to elicit a CTL response in blood of normal humans.

Autologous dendritic cells (DC) were differentiated from monocyte cultures derived from PBMC of normal donors by growth for five days in RPMI medium containing 10% human serum, 50 ng/ml GM-CSF and 30 ng/ml IL-4. Following culture, DC were infected overnight with recombinant P501S-expressing vaccinia virus at an M.O.I. of 5 and matured for 8 hours by the addition of 2 micrograms/ml CD40 ligand. Virus was inactivated by UV irradiation, CD8⁺ cells were isolated by positive selection using magnetic beads, and priming cultures were initiated in 24-well plates. Following five stimulation cycles, CD8⁺ lines were identified that specifically produced interferon-gamma when stimulated with autologous P501S-transduced fibroblasts. The P501S-specific activity of cell line 3A-1 could be maintained following additional stimulation cycles on autologous B-LCL transduced with P501S. Line 3A-1 was shown to specifically recognize autologous B-LCL transduced to express P501S, but not EGFP-transduced autologous B-LCL, as measured by cytotoxicity assays (⁵¹Cr release) and interferon-gamma production (Interferon-gamma Elispot; see above and Lalvani et al., *J. Exp. Med.* 186:859-865, 1997). The results of these assays are presented in Figures 6A and 6B.

EXAMPLE 13

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of certain prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 372 clones were identified, and 319 were successfully sequenced. Table I presents a summary of these clones, which are shown in SEQ ID NOs:385-400. Of these sequences SEQ ID NOs:386, 389, 390 and 392 correspond to novel genes, and SEQ ID NOs: 393 and 396 correspond to previously identified sequences. The others (SEQ ID NOs:385, 387, 388, 391, 394, 395 and 397-400) correspond to known sequences, as shown in Table I.

Table I
Summary of Prostate Tumor Antigens

Known Genes	Previously identified Genes	Novel Genes
T-cell gamma chain	P504S	23379 (SEQ ID NO:389)
Kallikrein	P1000C	23399 (SEQ ID NO:392)
Vector	P501S	23320 (SEQ ID NO:386)
CGI-82 protein mRNA (23319; SEQ ID NO:385)	P503S	23381 (SEQ ID NO:390)
PSA	P510S	
Ald. 6 Dehyd.	P784P	
L-iditol-2 dehydrogenase (23376; SEQ ID NO:388)	P502S	
Ets transcription factor PDEF (22672; SEQ ID NO:398)	P706P	
hTGR (22678; SEQ ID NO:399)	19142.2, bangur.seq (22621; SEQ ID NO:396)	
KIAA0295(22685; SEQ ID NO:400)	5566.1 Wang(23404; SEQ ID NO:393)	
Prostatic Acid Phosphatase(22655; SEQ ID NO:397)	P712P	
transglutaminase (22611; SEQ ID NO:395)	P778P	
HDLBP (23508; SEQ ID NO:394)		
CGI-69 Protein(23367; SEQ ID NO:387)		
KIAA0122(23383; SEQ ID NO:391)		
TEEG		

CGI-82 showed 4.06 fold over-expression in prostate tissues as

compared to other normal tissues tested. It was over-expressed in 43% of prostate tumors, 25% normal prostate, not detected in other normal tissues tested. L-iditol-2 dehydrogenase showed 4.94 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 90% of prostate tumors, 100% of normal prostate, and not detected in other normal tissues tested. Ets transcription factor PDEF showed 5.55 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% prostate tumors, 25% normal prostate and not detected in other normal tissues tested. hTGR1 showed 9.11 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 63% of prostate tumors and is not detected in normal tissues tested including normal prostate. KIAA0295 showed 5.59 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 47% of prostate tumors, low to undetectable in normal tissues tested including normal prostate tissues. Prostatic acid phosphatase showed 9.14 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 67% of prostate tumors, 50% of normal prostate, and not detected in other normal tissues tested. Transglutaminase showed 14.84 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 30% of prostate tumors, 50% of normal prostate, and is not detected in other normal tissues tested. High density lipoprotein binding protein (HDLBP) showed 28.06 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% of normal prostate, and is undetectable in all other normal tissues tested. CGI-69 showed 3.56 fold over-expression in prostate tissues as compared to other normal tissues tested. It is a low abundant gene, detected in more than 90% of prostate tumors, and in 75% normal prostate tissues. The expression of this gene in normal tissues was very low. KIAA0122 showed 4.24 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 57% of prostate tumors, it was undetectable in all normal tissues tested including normal prostate tissues. 19142.2 bangur showed 23.25 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors and 100% of

normal prostate. It was undetectable in other normal tissues tested. 5566.1 Wang showed 3.31 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 97% of prostate tumors, 75% normal prostate and was also over-expressed in normal bone marrow, pancreas, and activated PBMC. Novel clone 23379 showed 4.86 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in 97% of prostate tumors and 75% normal prostate and is undetectable in all other normal tissues tested. Novel clone 23399 showed 4.09 fold over-expression in prostate tissues as compared to other normal tissues tested. It was over-expressed in 27% of prostate tumors and was undetectable in all normal tissues tested including normal prostate tissues. Novel clone 23320 showed 3.15 fold over-expression in prostate tissues as compared to other normal tissues tested. It was detectable in all prostate tumors and 50% of normal prostate tissues. It was also expressed in normal colon and trachea. Other normal tissues do not express this gene at high level.

EXAMPLE 14

IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY ELECTRONIC SUBTRACTION

This Example describes the use of an electronic subtraction technique to identify prostate tumor antigens.

Potential prostate-specific genes present in the GenBank human EST database were identified by electronic subtraction (similar to that described by Vasmatizis et al., *Proc. Natl. Acad. Sci. USA* 95:300-304, 1998). The sequences of EST clones (43,482) derived from various prostate libraries were obtained from the GenBank public human EST database. Each prostate EST sequence was used as a query sequence in a BLASTN (National Center for Biotechnology Information) search against the human EST database. All matches considered identical (length of matching sequence >100 base pairs, density of identical matches over this region > 70%) were grouped

(aligned) together in a cluster. Clusters containing more than 200 ESTs were discarded since they probably represented repetitive elements or highly expressed genes such as those for ribosomal proteins. If two or more clusters shared common ESTs, those clusters were grouped together into a "supercluster," resulting in 4,345 prostate superclusters.

Records for the 479 human cDNA libraries represented in the GenBank release were downloaded to create a database of these cDNA library records. These 479 cDNA libraries were grouped into three groups, Plus (normal prostate and prostate tumor libraries, and breast cell lines, in which expression was desired), Minus (libraries from other normal adult tissues, in which expression was not desirable), and Other (fetal tissue, infant tissue, tissues found only in women, non-prostate tumors and cell lines other than prostate cell lines, in which expression was considered to be irrelevant). A summary of these library groups is presented in Table II.

Table II
Prostate cDNA Libraries and ESTs

Library	# of Libraries	# of ESTs
Plus	25	43,482
Normal	11	18,875
Tumor	11	21,769
Cell lines	3	2,838
Minus	166	
Other	287	

Each supercluster was analyzed in terms of the ESTs within the supercluster. The tissue source of each EST clone was noted and used to classify the superclusters into four groups: Type 1- EST clones found in the Plus group libraries only; no expression detected in Minus or Other group libraries; Type 2- EST clones found in the Plus and Other group libraries only; no expression detected in the Minus group; Type 3- EST clones found in the Plus, Minus and Other group libraries, but the

expression in the Plus group is higher than in either the Minus or Other groups; and Type 4- EST clones found in Plus, Minus and Other group libraries, but the expression in the Plus group is higher than the expression in the Minus group. This analysis identified 4,345 breast clusters (see Table III). From these clusters, 3,172 EST clones were ordered from Research Genetics, Inc., and were received as frozen glycerol stocks in 96-well plates.

Table III
Prostate Cluster Summary

Type	# of Superclusters	# of ESTs Ordered
1	688	677
2	2899	2484
3	85	11
4	673	0
Total	4345	3172

The inserts were PCR-amplified using amino-linked PCR primers for Synteni microarray analysis. When more than one PCR product was obtained for a particular clone, that PCR product was not used for expression analysis. In total, 2,528 clones from the electronic subtraction method were analyzed by microarray analysis to identify electronic subtraction breast clones that had high tumor vs. normal tissue mRNA. Such screens were performed using a Synteni (Palo Alto, CA) microarray, according to the manufacturer's instructions (and essentially as described by Schena et al., *Proc. Natl. Acad. Sci. USA* 93:10614-10619, 1996 and Heller et al., *Proc. Natl. Acad. Sci. USA* 94:2150-2155, 1997). Within these analyses, the clones were arrayed on the chip, which was then probed with fluorescent probes generated from normal and tumor prostate cDNA, as well as various other normal tissues. The slides were scanned and the fluorescence intensity was measured.

Clones with an expression ratio greater than 3 (i.e., the level in prostate tumor cDNA was at least three times the level in normal prostate cDNA) were

identified as prostate tumor-specific sequences (Table IV). The sequences of these clones are provided in SEQ ID NOs:401-453, with certain novel sequences shown in SEQ ID NOs:407, 413, 416-419, 422, 426, 427 and 450.

Table IV
Prostate-tumor Specific Clones

SEQ ID NO.	Sequence Designation	Comments
401	22545	previously identified P1000C
402	22547	previously identified P704P
403	22548	known
404	22550	known
405	22551	PSA
406	22552	prostate secretory protein 94
407	22553	novel
408	22558	previously identified P509S
409	22562	glandular kallikrein
410	22565	previously identified P1000C
411	22567	PAP
412	22568	B1006C (breast tumor antigen)
413	22570	novel
414	22571	PSA
415	22572	previously identified P706P
416	22573	novel
417	22574	novel
418	22575	novel
419	22580	novel
420	22581	PAP
421	22582	prostatic secretory protein 94
422	22583	novel
423	22584	prostatic secretory protein 94
424	22585	prostatic secretory protein 94
425	22586	known
426	22587	novel
427	22588	novel
428	22589	PAP
429	22590	known
430	22591	PSA
431	22592	known
432	22593	Previously identified P777P

433	22594	T cell receptor gamma chain
434	22595	Previously identified P705P
435	22596	Previously identified P707P
436	22847	PAP
437	22848	known
438	22849	prostatic secretory protein 57
439	22851	PAP
440	22852	PAP
441	22853	PAP
442	22854	previously identified P509S
443	22855	previously identified P705P
444	22856	previously identified P774P
445	22857	PSA
446	23601	previously identified P777P
447	23602	PSA
448	23605	PSA
449	23606	PSA
450	23612	novel
451	23614	PSA
452	23618	previously identified P1000C
453	23622	previously identified P705P

EXAMPLE 15

FURTHER IDENTIFICATION OF PROSTATE TUMOR ANTIGENS BY MICROARRAY ANALYSIS

This Example describes the isolation of additional prostate tumor polypeptides from a prostate tumor cDNA library.

A human prostate tumor cDNA expression library as described above was screened using microarray analysis to identify clones that display at least a three fold over-expression in prostate tumor and/or normal prostate tissue, as compared to non-prostate normal tissues (not including testis). 142 clones were identified and sequenced. Certain of these clones are shown in SEQ ID NOs:454-467. Of these sequences SEQ ID NOs:459-461 correspond to novel genes. The others (SEQ ID NOs:454-458 and 461-467) correspond to known sequences.

EXAMPLE 16
FURTHER CHARACTERIZATION OF PROSTATE TUMOR ANTIGEN P710P

This Example describes the full length cloning of P710P.

The prostate cDNA library described above was screened with the P710P fragment described above. One million colonies were plated on LB/Ampicillin plates. Nylon membrane filters were used to lift these colonies, and the cDNAs picked up by these filters were then denatured and cross-linked to the filters by UV light. The P710P fragment was radiolabeled and used to hybridize with the filters. Positive cDNA clones were selected and their cDNAs recovered and sequenced by an automatic ABI Sequencer. Four sequences were obtained, and are presented in SEQ ID NOs:468-471.

From the foregoing, it will be appreciated that, although specific embodiments of the invention have been described herein for the purposes of illustration, various modifications may be made without deviating from the spirit and scope of the invention. Accordingly, the present invention is not limited except as by the appended claims.

CLAIMS

1. An isolated polypeptide comprising at least an immunogenic portion of a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(a) sequences recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472;

(b) sequences that hybridize to any of the foregoing sequences under moderately stringent conditions; and

(c) complements of any of the sequence of (a) or (b).

2. An isolated polypeptide according to claim 1, wherein the polypeptide comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotide sequences.

3. An isolated polypeptide comprising a sequence recited in any one of SEQ ID NO: 108, 112, 113, 114, 172, 176, 178, 327, 329, 331, 339 and 383.

4. An isolated polynucleotide encoding at least 15 amino acid residues of a prostate tumor protein, or a variant thereof that differs in one or more

substitutions, deletions, additions and/or insertions such that the ability of the variant to react with antigen-specific antisera is not substantially diminished, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

5. An isolated polynucleotide encoding a prostate tumor protein, or a variant thereof, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing sequences.

6. An isolated polynucleotide comprising a sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

7. An isolated polynucleotide comprising a sequence that hybridizes, under moderately stringent conditions, to a sequence recited in any one of

SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

8. An isolated polynucleotide complementary to a polynucleotide according to any one of claims 4-7.

9. An expression vector comprising a polynucleotide according to any one of claims 4-7.

10. A host cell transformed or transfected with an expression vector according to claim 9.

11. An expression vector comprising a polynucleotide according claim 8.

12. A host cell transformed or transfected with an expression vector according to claim 11.

13. A pharmaceutical composition comprising a polypeptide according to claim 1, in combination with a physiologically acceptable carrier.

14. A vaccine comprising a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

15. A vaccine according to claim 14, wherein the non-specific immune response enhancer is an adjuvant.

16. A vaccine according to claim 14, wherein the non-specific immune response enhancer induces a predominantly Type I response.

17. A pharmaceutical composition comprising a polynucleotide according to claim 4, in combination with a physiologically acceptable carrier.

18. A vaccine comprising a polynucleotide according to claim 4, in combination with a non-specific immune response enhancer.

19. A vaccine according to claim 18, wherein the non-specific immune response enhancer is an adjuvant.

20. A vaccine according to claim 18, wherein the non-specific immune response enhancer induces a predominantly Type I response.

21. An isolated antibody, or antigen-binding fragment thereof, that specifically binds to a prostate tumor protein that comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472 or a complement of any of the foregoing polynucleotide sequences.

22. A pharmaceutical composition comprising an antibody or fragment thereof according to claim 18, in combination with a physiologically acceptable carrier.

23. A pharmaceutical composition comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a pharmaceutically acceptable carrier or excipient.

24. A pharmaceutical composition according to claim 23, wherein the antigen presenting cell is a dendritic cell or a macrophage.

25. A vaccine comprising an antigen-presenting cell that expresses a polypeptide according to claim 1, in combination with a non-specific immune response enhancer.

26. A vaccine according to claim 25, wherein the non-specific immune response enhancer is an adjuvant.

27. A vaccine according to claim 25, wherein the non-specific immune response enhancer induces a predominantly Type I response.

28. A vaccine according to claim 25, wherein the antigen-presenting cell is a dendritic cell.

29. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.

30. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a polynucleotide according to claim 4, and thereby inhibiting the development of a cancer in the patient.

31. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antibody or antigen-

binding fragment thereof according to claim 21, and thereby inhibiting the development of a cancer in the patient.

32. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of an antigen-presenting cell that expresses a polypeptide according to claim 1, and thereby inhibiting the development of a cancer in the patient.

33. A method according to claim 32, wherein the antigen-presenting cell is a dendritic cell.

34. A method according to any one of claims 29-32, wherein the cancer is prostate cancer.

35. A fusion protein comprising at least one polypeptide according to claim 1.

36. A fusion protein according to claim 35, wherein the fusion protein comprises an expression enhancer that increases expression of the fusion protein in a host cell transfected with a polynucleotide encoding the fusion protein.

37. A fusion protein according to claim 35, wherein the fusion protein comprises a T helper epitope that is not present within the polypeptide of claim 1.

38. A fusion protein according to claim 35, wherein the fusion protein comprises an affinity tag.

39. An isolated polynucleotide encoding a fusion protein according to claim 35.

40. A pharmaceutical composition comprising a fusion protein according to claim 32, in combination with a physiologically acceptable carrier.

41. A vaccine comprising a fusion protein according to claim 35, in combination with a non-specific immune response enhancer.

42. A vaccine according to claim 41, wherein the non-specific immune response enhancer is an adjuvant.

43. A vaccine according to claim 41, wherein the non-specific immune response enhancer induces a predominantly Type I response.

44. A pharmaceutical composition comprising a polynucleotide according to claim 40, in combination with a physiologically acceptable carrier.

45. A vaccine comprising a polynucleotide according to claim 40, in combination with a non-specific immune response enhancer.

46. A vaccine according to claim 45, wherein the non-specific immune response enhancer is an adjuvant.

47. A vaccine according to claim 45, wherein the non-specific immune response enhancer induces a predominantly Type I response.

48. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a pharmaceutical composition according to claim 40 or claim 44.

49. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a vaccine according to claim 41 or claim 45.

50. A method for removing tumor cells from a biological sample, comprising contacting a biological sample with T cells that specifically react with a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

wherein the step of contacting is performed under conditions and for a time sufficient to permit the removal of cells expressing the prostate tumor protein from the sample.

51. A method according to claim 50, wherein the biological sample is blood or a fraction thereof.

52. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient a biological sample treated according to the method of claim 50.

53. A method for stimulating and/or expanding T cells specific for a prostate tumor protein, comprising contacting T cells with one or more of:

(i) a polypeptide according to claim 1;

(ii) a polypeptide encoded by a polynucleotide comprising a sequence provided in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); and/or

(iv) an antigen presenting cell that expresses a polypeptide of (i) or (ii);

under conditions and for a time sufficient to permit the stimulation and/or expansion of T cells.

54. An isolated T cell population, comprising T cells prepared according to the method of claim 53.

55. A method for inhibiting the development of a cancer in a patient, comprising administering to a patient an effective amount of a T cell population according to claim 54.

56. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

(i) a polypeptide according to claim 1;

(ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;

(iii) a polynucleotide encoding a polypeptide of (i) or (ii); or

(iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate; and

(b) administering to the patient an effective amount of the proliferated T cells, and thereby inhibiting the development of a cancer in the patient.

57. A method for inhibiting the development of a cancer in a patient, comprising the steps of:

(a) incubating CD4⁺ and/or CD8⁺ T cells isolated from a patient with at least one component selected from the group consisting of:

- (i) a polypeptide according to claim 1;
- (ii) a polypeptide encoded by a polynucleotide comprising a sequence of any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472;
- (iii) a polynucleotide encoding a polypeptide of (i) or (ii); or
- (iv) an antigen-presenting cell that expresses a polypeptide of (i) or (ii);

such that T cells proliferate;

- (b) cloning at least one proliferated cell; and
- (c) administering to the patient an effective amount of the cloned T cells, and thereby inhibiting the development of a cancer in the patient.

58. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence selected from the group consisting of:

(i) polynucleotides recited in any one of SEQ ID NOs: 1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472; and

(ii) complements of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent; and

(c) comparing the amount of polypeptide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

59. A method according to claim 58, wherein the binding agent is an antibody.

60. A method according to claim 59, wherein the antibody is a monoclonal antibody.

61. A method according to claim 58, wherein the cancer is prostate cancer.

62. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient at a first point in time with a binding agent that binds to a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of polypeptide that binds to the binding agent;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polypeptide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

63. A method according to claim 62, wherein the binding agent is an antibody.

64. A method according to claim 63, wherein the antibody is a monoclonal antibody.

65. A method according to claim 62, wherein the cancer is a prostate cancer.

66. A method for determining the presence or absence of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide; and

(c) comparing the amount of polynucleotide that hybridizes to the oligonucleotide to a predetermined cut-off value, and therefrom determining the presence or absence of a cancer in the patient.

67. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

68. A method according to claim 66, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

69. A method for monitoring the progression of a cancer in a patient, comprising the steps of:

(a) contacting a biological sample obtained from a patient with an oligonucleotide that hybridizes to a polynucleotide that encodes a prostate tumor

protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:1-111, 115-171, 173-175, 177, 179-305, 307-315, 326, 328, 330, 332-335, 340-375, 381, 382 or 384-472, or a complement of any of the foregoing polynucleotides;

(b) detecting in the sample an amount of a polynucleotide that hybridizes to the oligonucleotide;

(c) repeating steps (a) and (b) using a biological sample obtained from the patient at a subsequent point in time; and

(d) comparing the amount of polynucleotide detected in step (c) to the amount detected in step (b) and therefrom monitoring the progression of the cancer in the patient.

70. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a polymerase chain reaction.

71. A method according to claim 69, wherein the amount of polynucleotide that hybridizes to the oligonucleotide is determined using a hybridization assay.

72. A diagnostic kit, comprising:

- (a) one or more antibodies according to claim 21; and
- (b) a detection reagent comprising a reporter group.

73. A kit according to claim 72, wherein the antibodies are immobilized on a solid support.

74. A kit according to claim 73, wherein the solid support comprises nitrocellulose, latex or a plastic material.

75. A kit according to claim 72, wherein the detection reagent comprises an anti-immunoglobulin, protein G, protein A or lectin.

76. A kit according to claim 72, wherein the reporter group is selected from the group consisting of radioisotopes, fluorescent groups, luminescent groups, enzymes, biotin and dye particles.

77. An oligonucleotide comprising 10 to 40 nucleotides that hybridize under moderately stringent conditions to a polynucleotide that encodes a prostate tumor protein, wherein the tumor protein comprises an amino acid sequence that is encoded by a polynucleotide sequence recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472, or a complement of any of the foregoing polynucleotides.

78. A oligonucleotide according to claim 77, wherein the oligonucleotide comprises 10-40 nucleotides recited in any one of SEQ ID NOs:2, 3, 8-29, 41-45, 47-52, 54-65, 70, 73-74, 79, 81, 87, 90, 92, 93, 97, 103, 104, 107, 109-111, 115-160, 171, 173-175, 177, 181, 188, 191, 193, 194, 198, 203, 204, 207, 209, 220, 222-225, 227-305, 307-315, 326, 328, 330, 332, 334, 350-365, 381, 382, 384, 386, 389, 390, 392, 393, 396, 401, 402, 407, 408, 410, 413, 415-419, 422, 426, 427, 432, 434, 435, 442-444, 446, 450, 452, 453, 459-461, 468-471 or 472.

79. A diagnostic kit, comprising:
(a) an oligonucleotide according to claim 77; and
(b) a diagnostic reagent for use in a polymerase chain reaction or hybridization assay.

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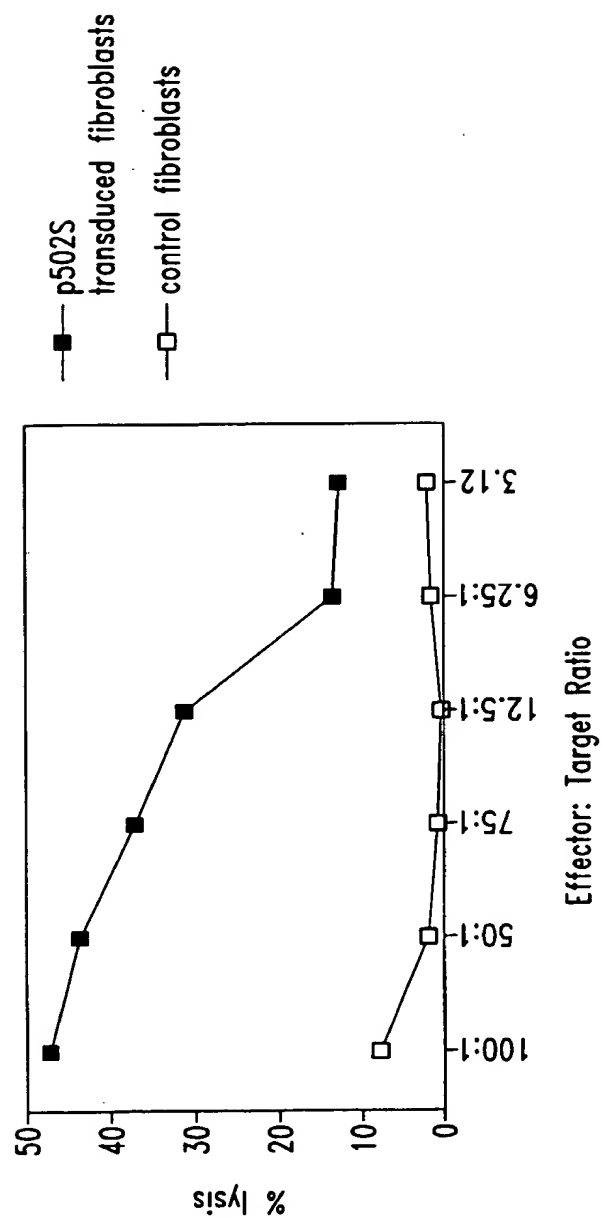
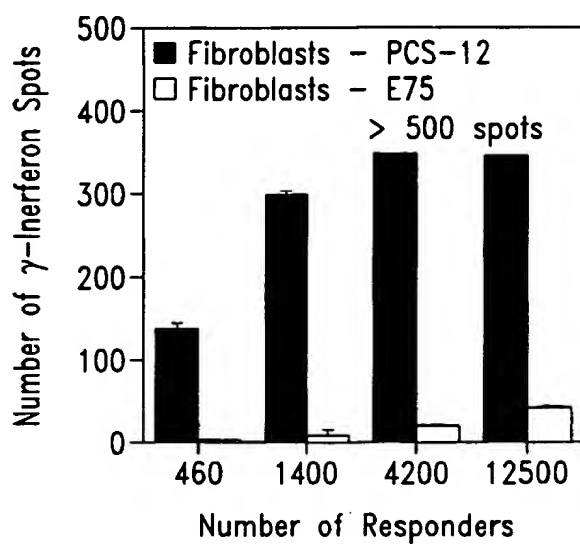
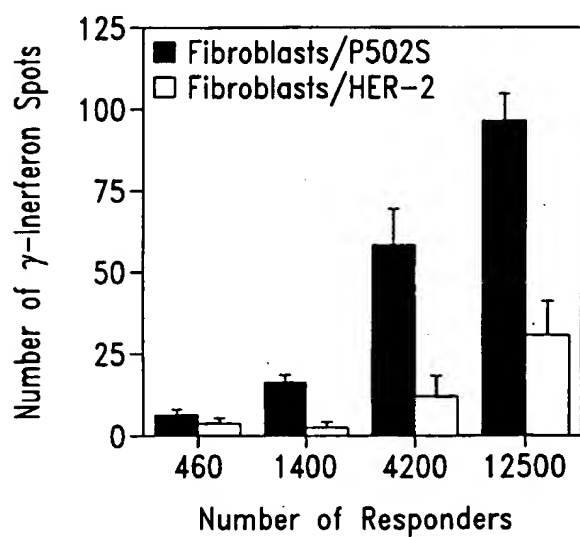


Fig. 1

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*Fig. 2A**Fig. 2B*

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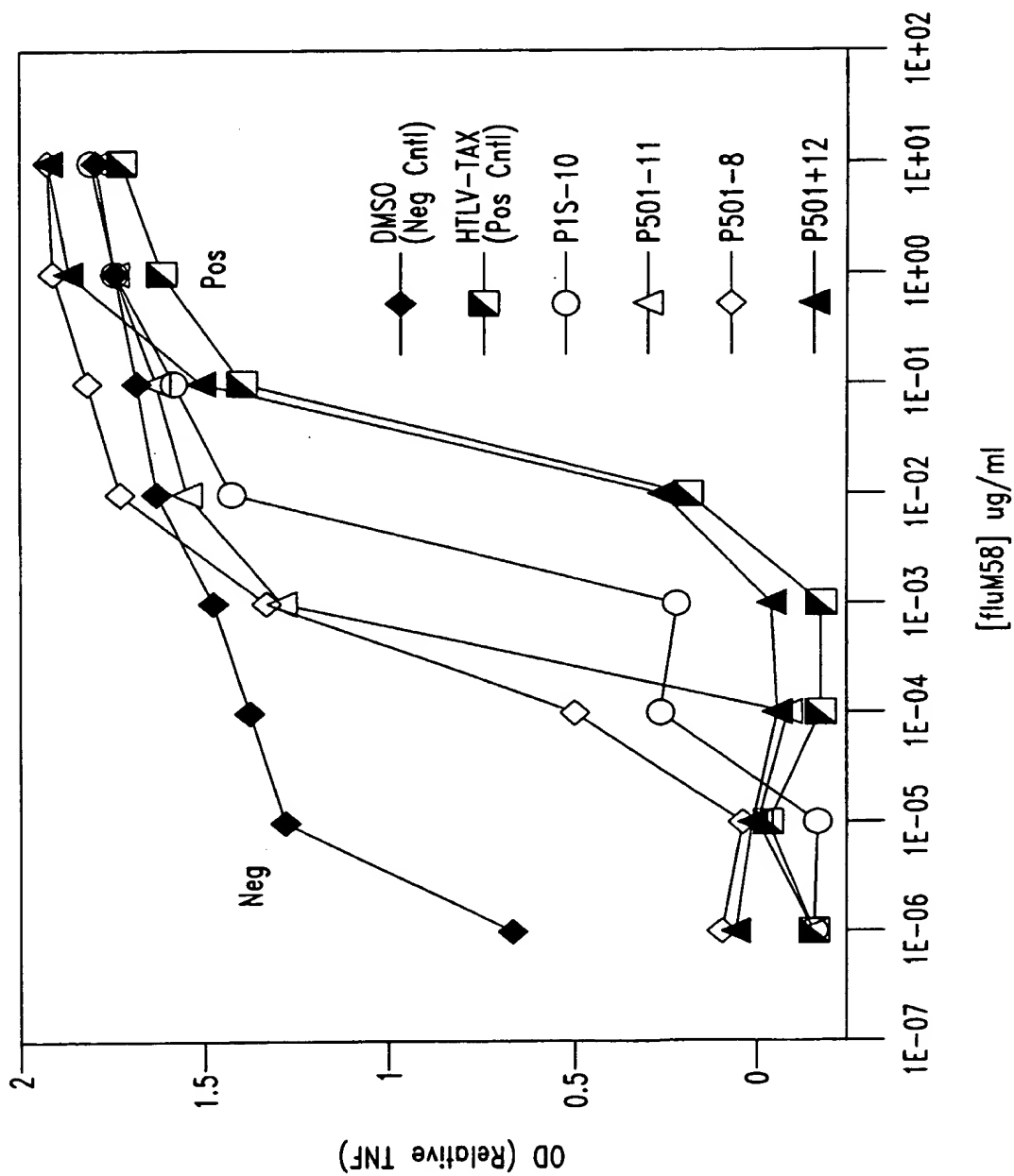


Fig. 3

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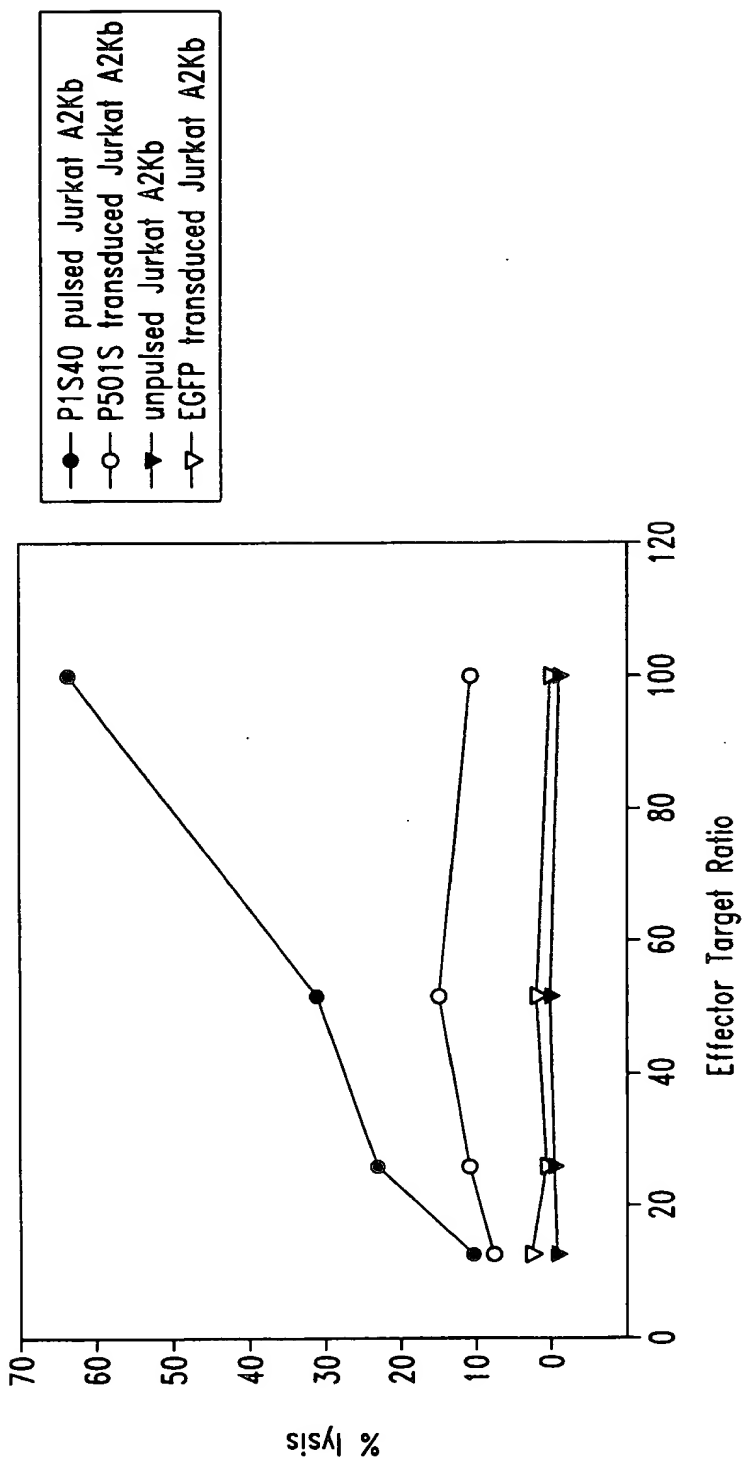
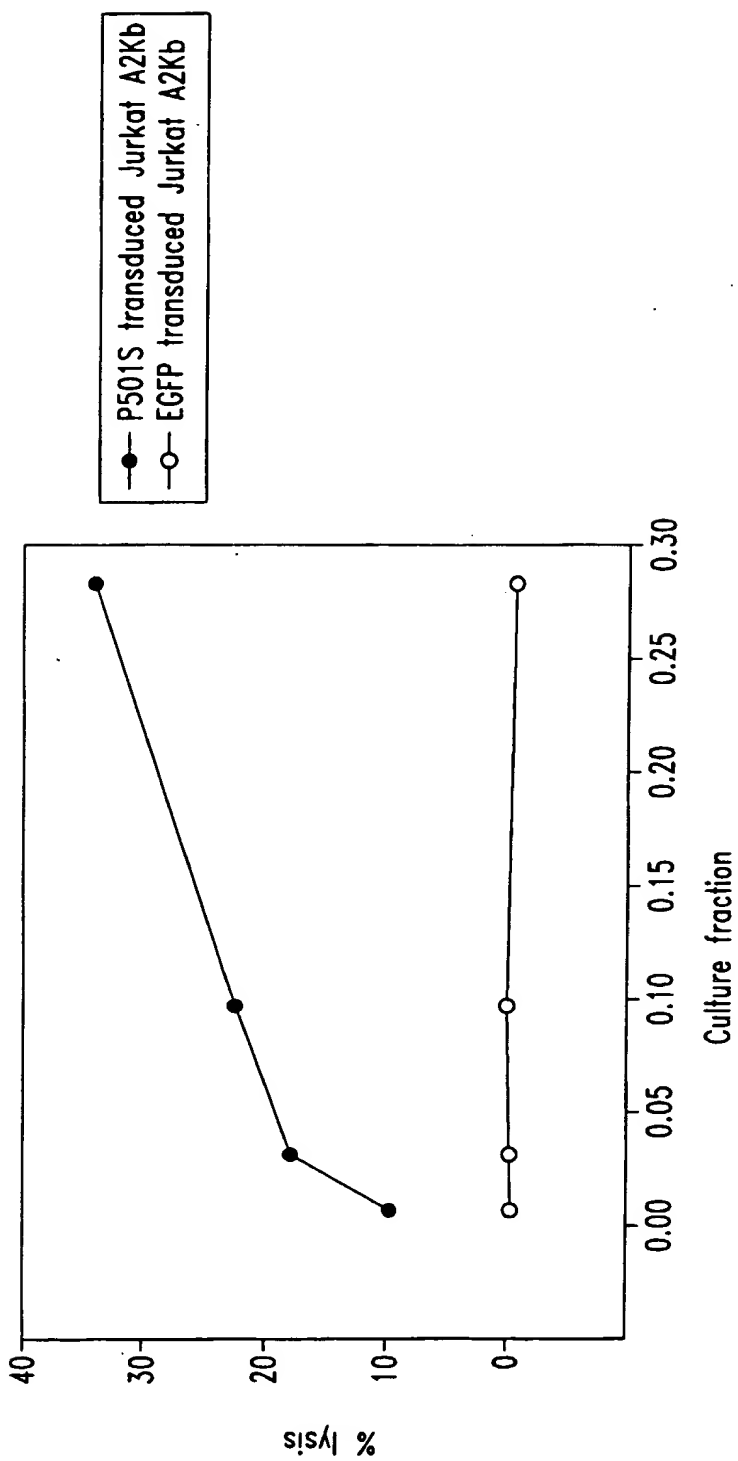
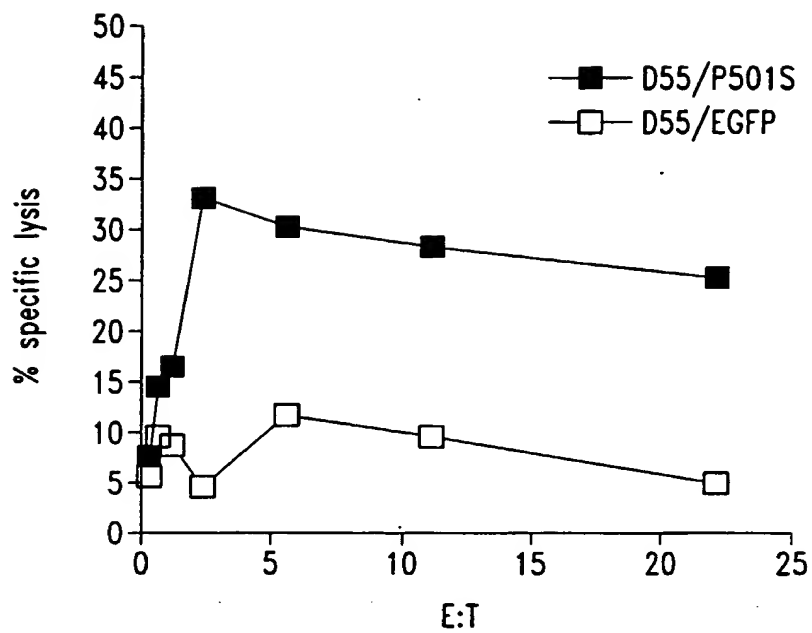
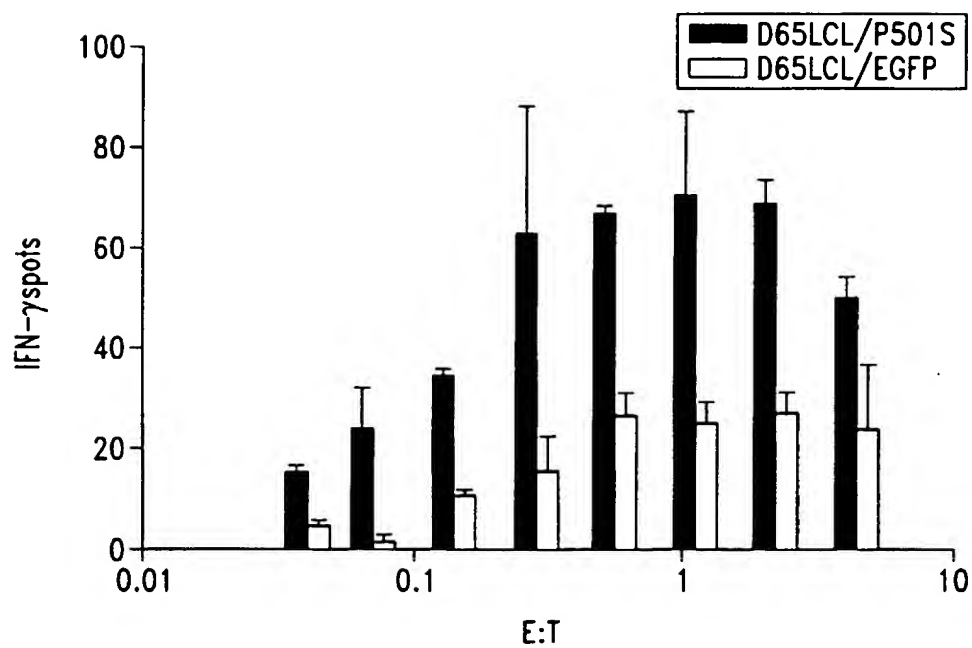


Fig. 4

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*Fig. 5*

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*Fig. 6A**Fig. 6B*

SEQUENCE LISTING

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DIAGNOSIS OF PROSTATE CANCER

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tctgtctcct	cactgggtgat	aaacgagccc	cgttccttgt	tgtgatcatg	atgaacaacc	120
tctcaaaaag	tcagaaccgg	agtcacacag	gcattctgtgc	cgtaaaagat	ttgacaccac	180
tctgccttcg	tcttctttgc	aaatacatct	gcaaacttct	tcttcatttc	tgcccaatca	240
tccatgtcga	tctgattggg	aagttcatca	gactttagtc	canntccttt	gatcagcagc	300
tcgtagaact	ggggttctat	tgctccaaca	gccatgaatt	ccccatctgc	tgctctgtaa	360
gtcgtataga	aaggtgctcc	accatccaac	atgttctgtc	ctcgaggggg	ggcccggtac	420
ccaattcgcc	ctatantgag	tcgtattacg	cgcgctcact	ggccgtcggt	ttacaacgtc	480
gtgactggga	aaaccctggg	cgttaccaac	ttaatcgctt	tgacgacat	ccccctttcg	540
ccagctgggc	gtaatancca	aaaggccccg	accgatcgcc	cttccaacag	ttgcgcacct	600
gaatgggnaa	atgggacccc	cctgttaccg	cgcattnaac	ccccgcnggg	tttngttggt	660
acccccacnt	nnaccgctta	cactttgccca	gcgccttanc	gcccgtctcc	tttncctttt	720
cttcccttcc	tttncnccn	ctttcccccg	gggtttcccc	cntcaaaacc	cna	773

<210> 4
 <211> 828
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(828)
 <223> n = A,T,C or G

<400> 4						
cctcctgagt	cctactgacc	tgtgctttct	ggtgtggagt	ccagggctgc	taggaaaagg	60
aatgggcaga	cacaggtgta	tgccaatgtt	tctgaaatgg	gtataatttc	gtcctctcct	120
tcggaacact	ggctgtctct	gaagacttct	cgctcagttt	cagtgaggac	acacacaaaag	180
acgtgggtga	ccatgttggt	tgtgggggtgc	agagatggga	gggggtggggc	ccaccctgga	240
agagtggaca	gtgacacaag	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcatg	aggcacacac	acagcaagga	tgacnctgta	aacatagccc	acgtgtcctt	360
gngggcactg	ggaagcctan	atnaggccgt	gagcanaaaag	aaggggagga	tccactagtt	420
ctanagcggc	gcgccaccgc	gtgganctcc	anccttttgt	cccttttagtg	agggttaatt	480
gcgcgcttgg	cntaatcatg	gtcatanctn	tttctgtgtg	gaaattgtta	tccgctcaca	540
attccacaca	acatacganc	cggaacata	aantgtaaac	ctgggggtgcc	taatgantga	600
ctaactcaca	ttaattgcgt	tgcgctcact	gcccgttttc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccaaccccc	ggggaaaagg	gtttgcgttt	tgggcgctct	720
tccgcttctt	cnetcantta	ntccctncnc	tcggtcattc	cggtgcngc	aaaccggttc	780
accnctcca	aaggggggtat	tccgggttcc	ccnaatccgg	ggananc		828

<210> 5
 <211> 834
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(834)
 <223> n = A,T,C or G

<400> 5
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 agttttaatt gcatccaaag tactaacaaa aactctagca atcaagaatg gcagcatggt 120
 attttataac aatcaacacc tgtggctttt aaaatttggt tttcataaga taattttatac 180
 tgaagtaaatt ctagccatgc ttttaaaaaa tgcttttaggt cactccaagc ttggcagtta 240
 acattttggca taaacaataa taaaacaatc acaattttaat aaataacaaa tacaacattg 300
 taggccataa tcataacacag tataaggaaa aggtggtagt gttgagtaag cagttatttag 360
 aatagaatac cttggcctct atgcaaatat gtctagacac tttgattcac tcagccctga 420
 cattcagttt tcaaagtagg agacagggtt tacagtatca ttttacagtt tccaacacat 480
 tgaaaacaag tagaaaatga tgagttgatt tttattaatg cattacatcc tcaagagtta 540
 tcaccaaccc ctacagttata aaaaattttc aagttatatt agtcatataa cttgggtgtgc 600
 ttatttttaa ttagtgctaa atggattaag tgaagacaac aatgggtcccc taatgtgatt 660
 gatattggtc atttttacca gcttctaaat ctnaactttc aggccttttga actggaacat 720
 tgnatnacag tgttccanag ttncaacctt ctggaacatt acagtgtgct tgattcaaaa 780
 tgttattttg ttaaaaatta aattttaacc tggtggaaaa ataatttgaa atna 834

<210> 6
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 6
 tttttttttt tttttttttt aagaccctca tcaatagatg gagacataca gaaatagtca 60
 aaccacatct acaaaatgcc agtatcaggc ggcggcttcg aagccaaagt gatgtttgga 120
 tgtaaaagta aatattagtt ggcggatgaa gcagatagtg aggaaagttg agccaataat 180
 gacgtgaagt ccgtggaagc ctgtggctac aaaaaatgtt gagccgtaga tgccgtcgga 240
 aatgggtgaag ggagactcga agtactctga ggctttagg agggtaaaat agagaccag 300
 taaaattgta ataagcagtg cttgaattat ttggtttcgg ttgttttcta ttagactatg 360
 gtgagctcag gtgattgata ctccctgatgc gagtaatacg gatgtgttta ggagtgggac 420
 ttctaggggg tttagcgggg tgatgcctgt tgggggccag tgccctccta gttggggggg 480
 aggggctagg ctggagtggt aaaaggctca gaaaaatcct gcgaagaaaa aaacttctga 540
 ggtaataaat aggattatcc cgtatcgaag gccttttttg acaggtggtg tgtggtggcc 600
 ttggtatgtg ctttctcgtg ttacatcgcg ccatcattgg tatatggta gtgtgttggg 660
 ttantangg ctantatgaa gaacttttgg antggaatta aatcaatngc ttggccggaa 720
 gtcattanga nggctnaaaa ggccctgtta ngggtctggg ctnggtttta cccnaccat 780
 ggaatncncc ccccggaacna ntgnatccct attcttaa 818

<210> 7
 <211> 817
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(817)
 <223> n = A,T,C or G

<400> 7
 tttttttttt tttttttttt tggctctaga gggggtagag ggggtgctat agggtaaata 60
 cgggccctat ttcaaagatt tttaggggaa ttaattctag gacgatgggt atgaaactgt 120
 gggttgctcc acagatttca gagcattgac cgtagtatac ccccggtcgt gtagcgggtga 180

aagtggtttg	gtttagacgt	cggggaattg	catctgtttt	taagcctaata	gtggggacag	240
ctcatgagt	caagacgtct	tgtgatgtaa	ttattatacn	aatgggggct	tcaatcgga	300
gtactactcg	attgtcaacg	tcaaggagtc	gcaggtcgcc	tggttctagg	aataatggg	360
gaagtatgta	ggaattgaag	attaatccgc	cgtagtcggt	gttctcctag	gttcaatacc	420
attggtggcc	aattgatttg	atggtaagg	gagggatcgt	tgaactcgtc	tggtatgtaa	480
aggatncctt	ngggatggga	aggcnatnaa	ggactangga	tnaatggcgg	gcangattt	540
tcaaacngtc	tctanttcct	gaaacgtctg	aaatgttaat	aanaattaan	tttngttatt	600
gaatnttng	gaaaagggt	tacaggacta	gaaaccaa	angaaaanta	atnntaang	660
cnttatcntn	aaaggtnata	accnctccta	tnatccacc	caatngnatt	ccccacnncn	720
acnattggat	nccccanttc	canaaanggc	cncccccgg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcance			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(799)

<223> n = A,T,C or G

<400> 8

catttcggg	tttactttct	aaggaaagcc	gagcgggaagc	tgctaacgtg	ggaatcggtg	60
cataaggaga	actttctgct	ggcacgcgct	agggacaagc	gggagagcga	ctccgagcgt	120
ctgaagcgca	cgteccagaa	ggtggacttg	gcactgaaac	agctgggaca	catccgcgag	180
tacgaacagc	gcctgaaagt	gctggagcgg	gaggtccagc	agtgtagccg	cgtectgggg	240
tgggtggccg	angcctganc	cgctctgcct	tgctgcccc	angtgggccc	ccacccccctg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcggcc	ccccacactg	gttggccttg	420
tctttgangt	gagcccatg	tccatctggg	ccactgtcng	gaccaccttt	ngggagtgtt	480
ctccttacaa	ccacannatg	cccggctcct	cccggaaacc	antcccancc	tgngaaggat	540
caagnccctgn	atccactnnt	nctanaaccg	gcncncnccg	cngtggaaac	cnccttntgt	600
tccttttctn	tnagggttaa	tnnccgcttg	gccttnccan	ngtcctncnc	nttttccnt	660
gttnaaattg	ttangcnccc	ncnntcccn	cnnnnncnan	cccgaaccnn	annttnnann	720
ncctgggggt	ncnncngat	tgaccenncc	nccctntant	tgcnttnggg	nncnntgccc	780
ctttccctct	nggganncg					799

<210> 9

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 9

acgccttgat	cctcccaggc	tgggactggt	tctggggagga	gccgggcatg	ctgtgggtttg	60
taangatgac	actcccaaag	gtggtcctga	cagtggccca	gatggacatg	gggctcacct	120
caaggacaag	gccaccaggt	gcgggggccc	aagcccacat	gatccttact	ctatgagcaa	180
aatcccctgt	gggggcttct	ccttgaagtc	cgccancagg	gctcagtctt	tggaccang	240
caggtcatgg	ggttgtngnc	caactggggg	ccncaacgca	aaanggcnc	gggcctcngn	300
cacccatccc	angacggcgc	tacactnctg	gacctccnnc	tccaccaett	tcatgcgctg	360
ttcntaccgc	cgnatntgtc	ccanctggtt	cngtgccnac	tccancttct	nggacgtgcg	420
ctacatacgc	cgggantcnc	nctcccgtt	tgtccctatc	cacgtncan	caacaaattt	480
cncctantg	caccnattcc	cacnttttnc	agntttccnc	nncgngett	cttntaaaag	540
ggttganc	cggaaaatnc	cccaaagg	ggggggcngg	tacccaactn	ccccctnata	600
gctgaantcc	ccatnaccnn	gnctcnatgg	ancntccnt	tttaannacn	ttctnaactt	660
gggaananc	ctcgnccntn	ccccnttaa	tccnccttg	cnaagnnct	ccccnntcc	720
nccnnntng	gcntntnann	cnaaaaaggc	ccnnnancaa	tctcctnn	cctcanttgc	780

ccanccctcg aaatcgccn c

801

<210> 10
 <211> 789
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(789)
 <223> n = A,T,C or G

<400> 10
 cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cggtgccaca tgccctgtccc 60
 acagtgtggc cgtgggtgaca gcttcagccg ccctcaccgg gttcaccttc tcagccctgc 120
 agatcctgcc ctacacactg gcctccctct accaccggga gaagcaggtg ttcttgccca 180
 aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttcctgc 240
 caggccctaa gcctggagct cccttcctta atggacacgt ggggtgctga ggcagtggcc 300
 tgcctcccacc tccacccgcg ctctgcgggg cctctgcctg tgatgtctcc gtacgtgtgg 360
 tgggtgggtga gccacccgan gccaggggtg ttccggggccg gggcatctgc ctggacctgc 420
 ccctcctgga tagtgcttcc tgctgtccca ngtggcccca tccctgttta tgggtccat 480
 tgtccagctc agccagtctg tcaactgccta tatggtgtct gccgcaggcc tgggtctggt 540
 cccatttact ttgctacaca ggtantattt gacaagaacg anttggccaa atactcagcg 600
 ttaaaaaatt ccagcaacat tgggggtgga aggcctgcct cactgggtcc aactccccgc 660
 tctgtttaac cccatggggc tgccggcttg gccgccaatt tctgttgctg ccaaantnat 720
 gtggtctctc gctgccacct gttgctggct gaagtgcnta cngcncanct nggggggtng 780
 gnggttccc 789

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11
 cccaccctac ccaaataatta gacaccaaca cagaaaagct agcaatggat tcccttctac 60
 tttgttaaat aaataagtta aatattttaa tgccctgtgc caacagaagg 120
 accaacaggc cacatcctga taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc 180
 tgtgggctga ggggacctgg ttcttgtgtg ttgcccctca ggactcttcc cctacaaata 240
 actttcatat gttcaaatac catggaggag tgtttcatcc tagaaactcc catgcaagag 300
 ctacattaaa cgaagctgca ggttaagggg cttanagatg ggaaaccagg tgactgagtt 360
 tattcagctc ccaaaaaacc ttctctaggt gtgtctcaac taggaggcta gctgttaacc 420
 ctgagcctgg gtaatccacc tgcagagtcc ccgcattcca gtgcatggaa cccttctggc 480
 ctccctgtat aagtccagac tgaaaccccc ttggaaggnc tccagtcagg cagccctana 540
 aactggggaa aaaagaaaag gacgccccan ccccagctg tgcanctacg cacctcaaca 600
 gcacagggtg gcagcaaaaa aaccacttta ctttggcaca aacaaaaact ngggggggca 660
 accccggcac cccnangggg gttaacagga ancngggnaa cntggaaccc aattnaggca 720
 ggccnccac cccnaatntt gctgggaaat ttttctctcc ctaaattntt tc 772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(751)
 <223> n = A,T,C or G

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<400> 12
gcccccaattc cagctgccac accacccacg gtgactgcat tagttcggat gtcatacaaa      60
agctgattga agcaaccctc tactttttgg tcgtgagcct tttgcttggg gcaggtttca      120
ttggctgtgt ttgtgacgtt gtcattgcaa cagaatgggg gaaaggcact gttctctttg      180
aagtanggtg agtcctcaaa atccgtatag ttggtgaagc cacagcactt gagccctttc      240
atggtgggtg tccacacttg agtgaagtct tcctgggaac cataatcttt cttgatggca      300
ggcactacca gcaacgtcag ggaagtgtct agccattgtg gtgtacacca aggcgaccac      360
agcagctgcn acctcagcaa tgaagatgan gaggangatg aagaagaacg tcncgagggc      420
acacttgctc tcagtcttan caccatanca gcccntgaaa accaananca aagaccacna      480
cncggctgc gatgaagaaa tnaccccneg ttgacaaact tgcattggcac tggganccac      540
agtggccnna aaaatcttca aaaaggatgc cccatcnatt gaccccccaa atgccactg      600
ccaacagggg ctgccccacn cncnnaacga tgancnatt gnacaagatc tncntggtct      660
tnatnaacnt gaaccctgcn tngtggctcc tggtcaggnc cnnngcctga cttctnaann      720
aangaactcn gaagncccca cngganannc g                                     751

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<210> 13
<211> 729
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)...(729)
<223> n = A,T,C or G

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<400> 13
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tgtggancct cagcagtncc ctctttcaga actcantgcc aaganccctg aacaggagcc      120
accatgcagt gcttcagctt cattaagacc atgatgatcc tcttcaattt gctcatcttt      180
ctgtgtggtg cagccctgtt ggcagtgggc atctgggtgt caatcgatgg ggcacccctt      240
ctgaagatct tcgggccact gtcgtccagt gccatgcagt ttgtcaacgt gggctacttc      300
ctcatcgcat ccggcggttg ggtcttagct ctagggtttcc tgggctgcta tgggtgctaag      360
actgagagca agtgtgcctt cgtgacgttc ttcttcaccc tcctcctcat cttcattgct      420
gaggttgcaa tgctgtggtc gccttggtgt acaccacaat ggctgagcac ttctgacgt      480
tgctggtaat gcctgccatc aanaaaagat tatgggttcc cagggaanact tcaactcaagt      540
gttggaaacac caccatgaaa gggctcaagt gctgtggctt cncccaacta tacggatttt      600
gaagantcac ctacttcaaa gaaaanagtg cctttccccc atttctgttg caattgacaa      660
acgtccccaa cacagccaat tgaaaacctg caccacaacc aaangggctc ccaaccanaa      720
attnaaggg                                     729

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<210> 14
<211> 816
<212> DNA
<213> Homo sapien

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<220>
<221> misc_feature
<222> (1)...(816)
<223> n = A,T,C or G

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```

<400> 14
tgctcttcct caaagttggt cttgttgcca taacaaccac cataggtaaa gcgggcgcag      60
tgttcgctga aggggttgta gtaccagcgc gggatgctct cttgcagag tcctgtgtct      120
ggcagggtcca cgcagtgcct tttgtcactg gggaaatgga tgcgctggag ctctgcaaaag      180
ccactcgtgt atttttcaca ggcagcctcg tccgacgcgt cggggcagtt ggggggtgtct      240
tcacactcca ggaaactgtc natgcagcag ccattgctgc agcggaactg ggtgggctga      300
cangtgccag agcacactgg atggcgctt tccatgnnan gggccctgng ggaaagtccc      360
tganccccc anctgcctct caaangcccc accttgacac ccccgacagg ctagaatgga      420
atcttcttcc cgaaaggtag ttnttcttgt tgcccaancc ancccntaa acaaactctt      480
gcanatctgc tccngggggg tcntantacc ancgtgggaa aagaacccca ggcngcgaac      540
caancttggt tggatnecgaa gcnataatct nctnttctgc ttggtggaca gcaccantna      600

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ctgtnnanct	ttagnccntg	gtcctcntgg	gttggncttg	aacctaatch	ccnntcaact	660
gggacaaggt	aantngccnt	cctttnaatt	cccnanentn	ccccctgggt	tgggggttttn	720
cncnctccta	ccccagaaan	nccgtgttcc	cccccaacta	ggggccnaaa	ccnnttnttc	780
cacaaccctn	ccccaccac	gggttcngnt	ggttng			816

<210> 15

<211> 783

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(783)

<223> n = A,T,C or G

<400> 15

ccaaggcctg	ggcaggcata	nacttgaagg	tacaacccca	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagattgg	cgcctactgc	ggggtgacac	ggatgtcagg	gtagagagga	120
aagaccctaa	ccaggtggaa	ctgtggggac	tcaaggaang	cacctacctg	ttccagctga	180
cagtgactag	ctcagaccac	ccagaggaca	cggccaacgt	cacagtcact	gtgctgtcca	240
ccaagcagac	agaagactac	tgcctcgcat	ccaacaangt	gggtcgtgc	cggggctctt	300
tcccacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttcgtt	tatggaggct	360
gcttgggcaa	caagaacaac	taccttcggg	aagaagagtg	cattctancc	tgtcnggggtg	420
tgcaaggtgg	gcctttgana	ngcanctctg	gggctcangc	gactttcccc	cagggccctt	480
ccatggaaaag	gcgccatcca	ntgttctctg	gcacctgtca	gcccacccag	ttccgctgca	540
ncaatggctg	ctgcacnac	antttcctng	aattgtgaca	acacccccca	ntgcccccaa	600
ccctcccaac	aaagcttccc	tgttnaaaaa	tacnccantt	ggcttttnac	aaacncccg	660
cncctcctnt	ttccccnntn	aacaaagggc	nctngctttt	gaactgcccn	aaccnnggaa	720
tctnccnngg	aaaaantncc	ccccctgggt	cctnnaance	cctccncnaa	anctncccc	780
ccc						816

<210> 16

<211> 801

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(801)

<223> n = A,T,C or G

<400> 16

gccccaatc	cagctgccac	accacccacg	gtgactgcat	tagttcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tacttttttg	tcgtgagcct	tttgcttggg	gcagggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtaggggtg	agtccctcaa	atccgtatag	ttgggtgaagc	cacagcactt	gagccctttc	240
atggtgggtg	tccacacttg	agtgaagtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtcag	gaagtgtca	gccattgtgg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagatgagg	aggaggatga	agaagaacgt	cncgagggca	420
cacttgctct	ccgtcttagc	accatagcag	cccangaaac	caagagcaaa	gaccacaacg	480
ccngctgcga	atgaaagaaa	ntaccacagt	tgacaaaactg	catggccact	ggacgcacagt	540
tggccccgaan	atcttcagaa	aagggatgcc	ccatcgattg	aacacccana	tgccacttgc	600
cnacagggct	gcncncncn	gaaagaatga	gccattgaag	aaggatcntc	ntgggtcttaa	660
tgaactgaaa	ccntgcatgg	tggccctgt	tcagggtctc	tggcagtgaa	ttctganaaa	720
aaggaacngc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgcc	ctgaattggc	780
ggccaaggan	ccctgccccn	g				801

<210> 17

<211> 740

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(740)
 <223> n = A,T,C or G

<400> 17

gtgagagcca	ggcgtccctc	tgccctgccca	ctcagtgcca	acacccggga	gctgttttgt	60
cctttgtgga	gcctcagcag	ttccctcttt	cagaactcac	tgccaagagc	cctgaacagg	120
agccaccatg	cagtgtctca	gcttcattaa	gaccatgatg	atcctcttca	atttgctcat	180
ctttctgtgt	ggtgcagccc	tgttggcagt	gggcatctgg	gtgtcaatcg	atggggcatc	240
ctttctgaag	atcttcgggc	cactgtcgtc	cagtgccatg	cagtttgtca	acgtgggcta	300
cttctctatc	gcagccggcg	ttgtggctct	tgctcttggt	ttcctgggct	gctatgggtc	360
taagacggag	agcaagtgtg	ccctcgtgac	gttcttcttc	atcctcctcc	tcattctcat	420
tgctgaagtt	gcagctgctg	tggtcgcctt	ggtgtacacc	acaatggctg	aaccattcct	480
gacgttgctg	gtantgcctg	ccatcaanaa	agattatggg	ttcccaggaa	aaattcactc	540
aantntggaa	caccnccatg	aaaagggctc	caatttctgn	tggttcccc	aactataccg	600
gaattttgaa	agantcnccc	tacttccaaa	aaaaaanant	tgcttttnc	ccnttctgt	660
tgcaatgaaa	acntcccaan	acngccaatn	aaaacctgcc	cnnncaaaaa	ggntcncaaa	720
caaaaaaant	nnaagggttn					740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(802)
 <223> n = A,T,C or G

<400> 18

ccgctgggtg	cgctgggtcca	gngnagccac	gaagcacgtc	agcatacaca	gcctcaatca	60
caaggtcttc	cagctgccgc	acattacgca	gggcaagagc	ctccagcaac	actgcatatg	120
ggatacactt	tacttttagca	gccagggtga	caactgagag	gtgtcgaagc	ttattcttct	180
gagcctctgt	tagtgaggga	agattccggg	cttcagctaa	gtagtcagcg	tatgtcccat	240
aagcaaacac	tgtgagcagc	cggaaggtag	aggcaaagtc	actctcagcc	agctctctaa	300
cattgggcag	gtccagcagt	tctccaaaca	cgtagacacc	agnggcctcc	agcacctgat	360
ggatgagtgt	ggccagcgct	gccccttgg	ccgacttggc	taggagcaga	aattgctcct	420
ggttctgccc	tgtaaccttc	acttccgcac	tcatactg	actgagtgtg	ggggacttgg	480
gctcaggatg	tccagagacg	tggttccgcc	ccctcnctta	atgacaccgn	ccanncaacc	540
gtcggctccc	gcccantgng	ttcgtcgtnc	ctgggtcagg	gtctgctggc	cncacttgc	600
aancttcgtc	nggcccatgg	aattcaccnc	accggaactn	gtangatcca	ctnnttctat	660
aaccgngcgc	caccgcnnnt	ggaactccac	tcttnttnc	tttacttgag	ggttaaggtc	720
acccttnncc	ttaccttggt	ccaaaccntn	cctgtgtcgc	anatngtnaa	tcngngccna	780
tnccancnc	atangaagcc	ng				802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 19

cnaagcttcc	aggtnacggg	ccgcnaancc	tgacccnagg	tancanaang	cagnncngcgg	60
gagcccaccg	tcacngngng	gngtctttat	nggagggggc	ggagccacat	cncctggacnt	120
cntgacccca	actcccncc	ncncantgca	gtgatgagt	cagaactgaa	ggtnacgtgg	180
caggaaccaa	gancaaannc	tgctccnntc	caagtgcgc	nagggggcgg	ggctggccac	240
gncatccnt	cnagtgtcgn	aaagcccn	cctgtctact	tgtttgagga	acngcnnga	300

catgcccagn	ggtanataac	nggcngagag	tnantttgcc	tctcccttcc	ggctgcgcan	360
cgngtntgct	tagnggacat	aacctgacta	cttaactgaa	cccnngaate	tnccnccccct	420
ccactaagct	cagaacaaaa	aacttegaca	ccactcantt	gtcacctgnc	tgctcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcnttangt	tcggtcctgg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gctccctgna	acaancnacc	600
cnnnntcca	aggggggggnc	ggcccccaat	ccccccaacc	ntnaattnan	tttanccccc	660
ccccnggcc	cggcctttta	cnancntcnn	nnaengggna	aaaccnnngc	tttncccaac	720
nnaatccncc	t					731

<210> 20

<211> 754

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(754)

<223> n = A,T,C or G

<400> 20

tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	tgnaaaacttc	cgaaattgtc	60
caacccctc	ntccaaatnn	ccntttccgg	gnggggggttc	caaacccean	ttanntttgg	120
annttaaatt	aaatnttntt	tgngngnnna	anccnaatgt	nangaaagtt	naaccanta	180
tnancttnaa	tnccctggaaa	ccngtngntt	ccaaaaatnt	ttaaccctta	antccctccg	240
aaatngttna	nggaaaacccc	aantttctct	aaggttggtt	gaaggntnaa	tnaaaaanccc	300
nnccaattgt	ttttngccac	gcctgaatta	attggnnttc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tccccccnnc	cccaattata	ccganttttt	ttngaattgg	420
gancccnccg	gaattaacgg	ggnnnnntccc	tnntgggggg	cnggnncccc	ccccntccgg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggntgag	nnntnggggtt	nccccccccc	cangggccct	ctcgnaagtt	tggggtttgg	600
ggggcctggg	attttntttc	ccctnttncc	tccccccccc	ccnggganag	aggttngngt	660
tttgntcnnc	ggccccnccn	aaganctttt	ccganttnan	ttaaatccnt	gcctnggcga	720
agtcnnttgn	agggntaaan	ggccccctnn	cggg			754

<210> 21

<211> 755

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(755)

<223> n = A,T,C or G

<400> 21

atcancccat	gaccccnac	nnngggaccnc	tcancgggnc	nnncnaccnc	cggccnatca	60
nngtnagnnc	actncnnttn	natcacnccc	cncnactac	gcccncnanc	cnacgcncta	120
nncanatancc	actganngcg	cgangtngan	ngagaaanct	nataccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacnng	nnnatccaat	ntgnancctc	cnaagtattn	240
nnccnccan	gattttccctn	anccgattac	ccntncccc	tanccctcc	cccccaacna	300
cgaaggcnct	ggncncaagg	nngcgnccnc	ccgctagntc	cccncaagt	cnncncccta	360
aactcanccn	nattacnccg	ttcntgagta	tcactccccc	aatctcacc	tactcaactc	420
aaaaaanatcn	gatacaaaa	aatncaagcc	tgnttatnac	actntgactg	gggtctctatt	480
ttagnggtcc	ntnaancntc	ctaatacttc	cagctcncct	tcnccaattt	ccnaanggct	540
ctttcngaca	gcatnttttg	gttcccnntt	gggttcttan	ngaattgcc	ttcntngaac	600
gggctcntct	tttccctcgg	ttancctgg	ttcnccggc	cagttattat	ttcccntttt	660
aaattcntnc	cntttanttt	tggcnttcna	aacccccggc	cttgaaaacg	gccccctggt	720
aaaaggttgt	tttganaaaa	tttttgtttt	gttcc			755

<210> 22

<211> 849

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnggan	taangcgacc	cgantttctag	gannncnccct	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggnggat	nntgctaggg	tgncnctcc	cannncnttn	180
cataactcng	nggccctgcc	caccaccttc	ggcggcccn	ngnccggggcc	cgggtcattn	240
gnnttaacn	cactnngcna	ncggtttccn	nccccnncng	accnnggcga	tccgggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccgnccc	ctttaccctt	nnacaagcca	360
cngccntcta	neenengccc	cccctccant	nngggggact	gccnanngt	ccgttntctng	420
nnacccennn	gggtncctcg	gttgtcgant	cnaccgnang	ccanggatcc	cnaaggaagg	480
tgcgttnttg	gccccatccc	ttcgctncgg	nncacccttc	ccgacnanga	nccgctccccg	540
cncnncgng	cctcncccg	caacacccgc	nctcntcngt	ncggnnnccc	ccccaccgcg	600
nccctcncnc	ngnccgnancn	ctccnccncc	gtctcannca	ccaccccgcc	ccgccaggcc	660
ntcanccacn	ggnggacnng	nagcncnttc	gcncgcgcgn	gcgnccnccct	cgcncngaa	720
ctnctcngg	ccantnncgc	tcaanccnna	cnaaacgcgcg	ctgcgcggcc	cgnagcgnc	780
ncctccncca	gtcctccccg	cttccnacc	angnttccn	cgaggacacn	nnaccccgcc	840
nncangcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcaaacta	tacttcgctc	gnactcgtgc	gcctcgtcnc	tcttttctctc	cgcaaccatg	60
tctgacnanc	ccgattnggc	ngatatchan	aagntcganc	agtccaaact	gantaacaca	120
cacacnncn	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
nggcgaatcg	taatnaggcg	tgcgcgcgca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccncccc	tactcttcn	nagctgtcnn	acccctngtn	cgnaccccc	naggtcggga	300
tccgggtttn	nntgaccgng	cnnccccctc	ccccntccat	nacganccnc	ccgcaccacc	360
nanngcncgc	nccccgnnet	cttcgcncnc	ctgtcctntn	cccctgtngc	ctggcncngn	420
accgcattga	ccctcgcenn	ctnccnngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnnngc	tctgcncgcg	gttcccttcn	ncnncttcca	ccatcttctt	tacnggggtct	540
ccnccgcntc	tcnnncacnc	cctggggaagc	tnctcctntgc	cccccttnac	tccccccctt	600
cgncgtgncc	cgncccccacc	ntcatttnca	nacgntcttc	acaannncct	ggntnnctcc	660
cnancngncn	gtcanccnag	ggaagggngg	ggnnccnntg	nttgacgttg	ngnggangtc	720
cgaanantcc	tcnccntcan	cncctaccct	cgggcgnnet	ctcngttnc	aacttancaa	780
ntctcccccg	ngngcncntc	tcagcctcnc	ccnccccnct	ctctgcantg	tnctctgctc	840
tnaccnntac	gantnttcgn	cncctctttt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

gcatgcaagc	ttgagtattc	tatagngtca	cctaaatanc	ttggcantaat	catgggtcnta	60
nctgncttcc	tgtgtcaaat	gtatacnaa	tanatatgaa	tctnatntga	caagannngta	120
tctnncatta	gtaacaantg	tnntgtccat	cctgtcngan	canattccca	tnnattncgn	180
cgcattcnen	gcncantatn	taatngggaa	ntcnntnnn	ncaccnnccat	ctatcntncc	240
gcncctgac	tggagagat	ggatnanttc	tnntntgacc	nacatgttca	tcttggattn	300
aananccccc	cgcnngccac	cggttngnng	cnagecnnctc	ccaagacctc	ctgtggaggt	360
aacctgcgtc	aganncatca	aacntgggaa	acccgcnncc	angtnnaagt	ngnnncanan	420
gatcccgctc	aggnttnacc	atcccttcnc	agcgccccct	ttngtgcctt	anagngnagc	480
gtgtccnanc	cnctcaacat	ganacgcgcc	agnccanccg	caattnggca	caatgtcgnc	540
gaaccccccta	gggggantna	tncaaaancc	caggattgtc	cncncangaa	atcccnanc	600
ccnccctac	ccncttttg	gacngtgacc	aantcccgga	gtncaggtcc	ggcngnctc	660
ccccaccggt	nnccntgggg	gggtgaanct	cngnntcanc	cngncgaggn	ntcgnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agnccnctn	cgtataacce	cccctcncca	780
nccnacngnt	agntcccccc	cngggtncgg	aangg			815

<210> 25
 <211> 775
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(775)
 <223> n = A,T,C or G

<400> 25						
ccgagatgtc	tcgtctcgtg	gccttagctg	tgtctcgcgt	actctctctt	tctggcctgg	60
aggctatcca	gcgtactcca	aagattcagg	tttactcacg	tcatccagca	gagaatggaa	120
agtcaaattt	cctgaattgc	tatgtgtctg	ggtttcatcc	atccgacatt	gaanttact	180
tactgaagaa	tgganagaga	attgaaaaag	tggagcattc	agacttgtct	ttcagcaagg	240
actggtcttt	ctatctcntg	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctgccgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gatcgagaca	360
tgtaaagcagn	cnncatggaa	gtttgaagat	gccgcatttg	gattggatga	attccaaatt	420
ctgcttgctt	gcnttttaat	antgatatgc	ntatacaccc	taccctttat	gnccccaaat	480
tgtaggggtt	acatnantgt	tcnctntngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcccgt	cncccngttn	ngaattgttc	cnnaaccacg	gttggtctcc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cnctttncaa	ggttggggga	accnaaaatt	tcnctnttgc	660
ccncccncca	cnntcttgng	nnccnccntt	ggaaaccttc	cnattccccct	tggcctcnna	720
nccttnncta	anaaaacttn	aaancgtngc	naaanntttn	acttcccccc	ttacc	775

<210> 26
 <211> 820
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(820)
 <223> n = A,T,C or G

<400> 26						
anattantac	agtgtaatct	tttcccagag	gtgtgtanag	ggaacggggc	ctagaggcat	60
cccanagata	nctttatnca	acagtgcctt	gaccaagagc	tgctgggcac	atttcctgca	120
gaaaagggtg	cggtecccat	cactcctcct	ctcccatagc	catcccagag	gggtgagtag	180
ccatcangcc	ttcggtgagg	gggagtcang	gaaacaacan	accacagagc	anacagacca	240
ntgatgacca	tgggctggag	cgagcctctt	ccctgnaccg	gggtggcana	nganagccta	300
nctgaggggt	cacactataa	acgttaacga	cnagatnan	cacctgcttc	aagtgcaccc	360
ttcctacctg	acnaccagn	accnnnaact	gncgcctggg	gacagcnctg	ggancagcta	420
acnnagcact	cacctgcccc	cccatggccg	tnccntccc	tggtcctgnc	aagggaagct	480
ccctgttggg	attncgggga	naccaaggga	nccccctcct	ccanctgtga	aggaaaaann	540
gatggaattt	tncccttccg	gccnntcccc	tcttccttta	cacgccccct	nnctactctc	600
tccctctntt	ntcctgncnc	acttttnacc	ccnnnatctc	ccttnattga	tcggannctn	660

ganattccac tnnccctnc cntcnatcng naanacnaaa nactntctna cccnggggat 720
 gggnnccctcg ntcatectct ctttttctct accncenntt ctttgectct ccttngatca
 780tccaacntc gntggccntn ccccccnntt tcttttccc
 820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctcttcc tctcagggga cctctgactg ctctgggcca aagaatctct 60
 tgtttcttct ccgagcccca ggcagcgggtg attcagccct gcccaacctg attctgatga 120
 ctgcggatgc tgtgacggac ccaaggggca aataggggtcc cagggtccag ggaggggcgc 180
 ctgctgagca ctccgcgcc caccctgcc cagccctgc catgagctct gggctgggtc 240
 tccgcctcca gggttctget ctccangca ngccancaag tggcgtggg ccacactggc 300
 ttcttctgc cccntccctg gctctganc tctgtcttcc tgtcctgtgc angcnccttg 360
 gatctcagtt tccctcctc anngaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnan tggnetgtnc tgtcnnactt taatgggccn gaccggctaa tccctccctc 480
 nctcccttcc anttcnnna accngcttnc cntctctcc ccntancccg ccngggaanc 540
 ctcccttgcc ctnaccangg gccnnnaccg cccntnnctn ggggggcnng gttnctncnc 600
 ctgntncccc cnetcncnt tncctcgtec cncnncgc nngcannttc nengtcccn 660
 tnnctcttcn ngntnctgnaa ngntcncntn tnnnnngncn ngntnntncn tccctctcnc 720
 cnnntgnang tnnntnnnc ncnngncccc nnnnnnnnn nggnntnnn tctncncngc 780
 cccnncccc ngnattaagg cctccnntct ccggccnc 818

<210> 28
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 28
 aggaagggcg gagggatatt gtangggatt gagggatagg agnataangg gggaggtgtg 60
 tcccaacatg anggtgnngt tctcttttga angaggggtg ngtttttann ccnggtgggt 120
 gattnaacct cattgtatgg agnnaaaggn tttnagggat ttttcggctc ttatcagtat 180
 ntanattcct gtnaatcgga aaatnatntt tcnnccggaa aatnttgctc ccatccgnaa 240
 attnctcccc ggtagtgc atntnggggn cngccangtt tcccaggctg ctanaatcgt 300
 actaaagntt naagtggan tncaaatgaa aacctnnac agagnatccn tacccgactg 360
 tnnnttncct tcgccctntg actctgcnn agcccaatac ccnngnngnat gtcncccn 420
 nnnngcncnc tgaaannnnc tcgnggctnn gancatcang ggggttctgca tcaaaagcnn 480
 cgtttctncat naaggcactt tngcctcctc caaccnctng cctcnncca tttngccgtc 540
 nggttctncct acgctnntng cncctnnntn ganattttnc ccgcctnggg naancctcct 600
 gnaatgggta gggnetntc ttttnaccnn gnggtntact aatcnnctnc acgctnctt 660
 tctcnacccc ccccttttt caatccanc ggcnaatggg gtctccccnn cgangggggg 720
 nnnccannnc c 731

<210> 29
 <211> 822
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(822)
 <223> n = A,T,C or G

<400> 29

actagtccag	tgtggtggaa	ttccattgtg	ttggggncnc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnangc	ctataangaa	nannaataga	nctgtncnnt	120
atntntacnc	tcatanncct	cnnnaccac	tccctcttaa	cccctactgt	gcctatngcn	180
tnnctantct	ntgccgcctn	cnanccaccn	gtgggccnac	cncnngnatt	ctcnatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctatacctac	nccaatgcta	nnnctaancn	300
tccatnantt	annntaacta	ccactgaant	ngactttcnc	atnanctcct	aatttgaatc	360
tactctgact	cccacngcct	annnattagc	ancntccccc	nacnatntct	caaccaaadc	420
ntcaacaacc	tatctantct	ttcnccaacc	nttnccctccg	atcccccnac	aacccccctc	480
ccaaatacce	nccacctgac	ncctaaccn	caccatcccg	gcaagccnan	ggncatttan	540
ccactggaat	cacnatngga	naaaaaaac	ccnaactctc	tancncnnat	ctccctaana	600
aatnctcctn	naatttactn	ncantnccat	caanccccacn	tgaaacnnaa	cccctgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	annncccaac	ctttngggcc	cccccnctnc	720
ccnaatgaag	gnncccaat	cnangaaacg	nccntgaaaa	ancnaggcna	anannntccg	780
canatcctat	cccttanttn	ggggncctt	ncccnngggcc	cc		822

<210> 30
 <211> 787
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(787)
 <223> n = A,T,C or G

<400> 30

cggccgcctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctccccct	120
gtctgcagga	tttgatgtct	gaagtcgtgg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggagggcc	tctctcgcca	gcctccccct	tctctccacg	ctctccangg	240
acaccagggg	ctccaggcag	cccattattc	ccagnangac	atgggtgtttc	tccacgcgga	300
cccatggggc	ctgnaaggcc	agggtctcct	ttgacaccat	ctctcccgtc	ctgcctggca	360
ggccgtggga	tccactantt	ctanaacggg	cgccaccncg	gtgggagctc	cagcttttgt	420
tcccnttaat	gaaggttaat	tgcncgcttg	gcgtaatcat	nggtcanaac	tnnttctctg	480
gtgaaattgt	ttntccccct	ncnatccnc	ncnacatacn	aacccgggan	cataaagtgt	540
taaagccttg	gggtngcctn	nngaanaaac	tnaactcaat	taattgcgtt	ggctcatggc	600
ccgctttccn	ttcnggaaaa	ctgtcntccc	ctgcttntnt	gaatcgggca	cccccnngg	660
aaaagcgggt	tgcnttttng	gggntcctt	ccnctccccc	cctcnctaan	ccctncgctt	720
cggtcgttnc	nggtngcggg	gaangggnat	nnnctccnc	naagggggng	agnnnngntat	780
ccccaaa						787

<210> 31
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(799)
 <223> n = A,T,C or G

<400> 31

ttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggctattaga	agcaagaagg	aaggaggagg	ggcagagcgc	cctgctgagc	120
aacaaaggac	tcctgcagcc	ttctctgtct	gtctcttggc	gcaggcacat	ggggaggcct	180
cccgcagggt	gggggccacc	agtccagggt	tgggagcact	acanggggtg	ggagtgggtg	240
gtggctggtg	cnaatggcct	gncacanatc	cctacgattc	ttgacacctg	gatttcacca	300

ggggaccttc	tgttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	ggctgttcat	ggaaagcaca	gggtgtccnat	ttnggctggg	acttggtaca	420
tatggttccg	gcccacctct	cccntcnaaa	aagtaattca	ccccccccc	ccntctnttg	480
cctggggcct	taantaccca	caccggaact	canttantta	ttcatcttng	gntgggcttg	540
ntnatcnccn	cctgaangcg	ccaagttgaa	aggccacgcc	gtncnccnctc	cccatagnan	600
ntttttnnct	canctaatac	ccccccnggc	aacnatccaa	ttcccccccn	tggggggcccc	660
agcccanngc	ccccgncctc	ggnnnccnng	cncgnantcc	ccaggnctctc	ccantcngnc	720
ccnnngcncc	cccgcacgca	gaacanaagg	ntngagccnc	cgcannnnnn	nggtnnncac	780
ctcgcccccc	ccnnccgngg					799

<210> 32
 <211> 789
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(789)
 <223> n = A,T,C or G

<400> 32						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggtta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcggcgggcg	ccctacctgc	ggtaccaaat	ntgcagcctc	180
cgctcccgtc	tgatnttcct	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgggccntn	240
ggtgggcacc	ctgggatttn	aattttccacg	ggcacaatgc	ggtcgcanc	cctcaccacc	300
nattaggaat	agtggnttta	ccnccnccg	ttggcnact	ccccntggaa	accacttntc	360
gcggtccgg	catctggtct	taaaccttgc	aaacnctggg	gccctctttt	tggttantnt	420
nccngccaca	atcatnactc	agactggcnc	gggctggccc	caaaaaan	ccccaaaacc	480
ggncatgtc	ttnnccgggt	tgctgcnatn	tncatcacct	cccgggcnc	ncaggncaac	540
ccaaaagtgc	ttgnggccc	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
ccccttggcc	cccaaatact	ccccccgntt	nctgggtttg	ggaacccacg	cctctnnctt	660
tggnnggcaa	gntggntccc	ccttcggggc	cccgggtggc	ccnctctaa	ngaaaacncc	720
ntcctnnnca	ccatcccccc	nngnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnccg						789

<210> 33
 <211> 793
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(793)
 <223> n = A,T,C or G

<400> 33						
gacagaacat	ggtggatggt	ggagcacctt	tctatacgac	ttacaggaca	gcagatgggg	60
aattcatggc	tggtggagca	atanaacccc	agttctacga	gctgctgatc	aaaggacttg	120
gactaaagtc	tgatgaactt	cccaatcaga	tgagcatgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgtattt	gcaaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttggtcat	catgatcaca	300
acaangaacg	gggctcgttt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctgtt	aaacaccccc	gccatccctt	ctttcaaaa	ggatccacta	cttctagagc	420
ggncgccacc	gcggtggagc	tccagctttt	gttcccttta	gtgagggtta	attgcgcgct	480
tggcgtaatc	atggtcatan	ctgtttcctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatttt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcactg	cccgttttcc	agtcgggaaa	acctgtcctt	660
gccagctgcc	nttaatgaat	cnggccaccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgccggcna	780
acggtatcna	cct					793

<210> 34
 <211> 756
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(756)
 <223> n = A,T,C or G

<400> 34
 gccgcgaccg gcatgtacga gcaactcaag ggcgagtggga accgtaaaag ccccaatctt 60
 ancaagtgcg gggaanagct gggtcgactc aagctagttc ttctggagct caacttcttg 120
 ccaaccacag ggaccaagct gaccaaacag cagctaattc tggcccgta catactggag 180
 atcgggggccc aatggagcat cctacgcaan gacatcccct ccttcgagcg ctacatggcc 240
 cagctcaaat gctactactt tgattacaan gagcagctcc ccgagtcagc ctatatgcac 300
 cagctcttgg gcctcaacct cctcttcctg ctgtcccaga accgggtggc tgantnccac 360
 acgganttgg ancggctgcc tgcccaanga catacanacc aatgtctaca tcnaccacca 420
 gtgtccttga gcaatactga tgganggcag ctaccncaa gtnttcctgg ccnagggtaa 480
 catccccgcg cgagagctac accttcttca ttgacatcct gctcgacact atcagggatg 540
 aaaatcgcn ggttgctcca gaaaggctnc aanaanatcc ttttcnctga agggccccgg 600
 atnncntagt nctagaatcg gcccgccatc gcggtgganc ctccaacctt tcgttnccct 660
 ttactgaggg ttnattgccg cccttggcgt tatcatggtc acnccngttn cctgtgttga 720
 aattnttaac cccccacaat tccacgccna cattn 756

<210> 35
 <211> 834
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(834)
 <223> n = A,T,C or G

<400> 35
 ggggatctct anactnacct gnatgcatgg ttgtcgggtg ggtcgctgtc gatgaanatg 60
 aacaggatct tgcccttgaa gctctcggtc gctgtnttta agttgctcag tctgccgtca 120
 tagtcagaca cnctcttggg caaaaaacan caggatntga gtcttgattt cacctccaat 180
 aatcttcngg gctgtctgct cgggtgaactc gatgacnang ggcagctggt tgtgtntgat 240
 aaantccanc angttctcct tgggtgacctc cccttcaaag ttgttcgggc cttcatcaaa 300
 cttctnnaan angannancc canctttgtc gagctggat ttgganaaca cgtcactgtt 360
 ggaaactgat cccaaatggg atgtcatcca tcgcctctgc tgccctgcaa aaacttgctt 420
 ggcncaaatc cgactcccn tccttgaaag aagccnatca cccccctc cctggactcc 480
 nncaangact ctnccgctnc ccntccnng cagggttggg ggcannccgg gccntgcgc 540
 ttcttcagcc agttcacnat ntcatcagc ccctctgcca gctgtntat tccttggggg 600
 ggaanccgtc tctcccttcc tgaannaact ttgaccgtng gaatagccgc gcntcnccnt 660
 acntnctggg ccgggttcaa antccctccn ttgncnntcn cctcgggcca ttctggattt 720
 nccnaacttt ttccttcccc cccccnccg ngtttgntt tttcatnggg ccccaactct 780
 gctnttgccc antccctg gggcntntan cccccctnt ggtcccntng ggcc 834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(814)
 <223> n = A,T,C or G

<400> 36

cggnccgcttt	ccngccgcgc	cccgtttcca	tgacnaaggc	tcccttcang	ttaaatacnn	60
cctagnaaac	attaatgggt	tgctctacta	atacatcata	cnaaccagta	agcctgcccc	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaaggc	tggtctctcc	acccctgtga	180
ggaaaggcct	gccttgtaag	acaccacaat	ncggctgaat	ctnaagtctt	gtgttttact	240
aatggaaaaa	aaaaataaac	aanaggtttt	gttctcatgg	ctgccaccg	cagcctggca	300
ctaaaacanc	ccagcgctca	cttctgcttg	ganaaaatatt	ctttgctctt	ttggacatca	360
ggcttgatgg	tatcactgcc	acntttccac	ccagctgggc	ncccttcccc	catntttgtc	420
antganctgg	aaggcctgaa	ncttagtctc	caaaagtctc	ngcccacaag	accggccacc	480
agggggangtc	ntttncagtg	gatctgccaa	anantaccen	tatcatcnnt	gaataaaaaag	540
gcccctgaac	ganatgcttc	cancancctt	taagacccat	aatcctngaa	ccatgggtgcc	600
cttcgggtct	gatacnaaag	gaatgttcc	gggtcccant	ccctcctttg	ttnccttacgt	660
tgtnntggac	ccntgctngn	atnaccnaan	tgatatcccc	ngaagcacc	tnccctggc	720
atgtgantt	cntaaattct	ctgccctacn	nctgaaagca	cnattccctn	ggcncnnaan	780
ggngaactca	agaaggtctn	ngaaaaacca	cncn			814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(760)
 <223> n = A,T,C or G

<400> 37						
gcattgctgct	cttctcaaaa	gttggttcttg	ttgccataac	aaccaccata	ggtaaagcgg	60
gcgcagtggt	cgctgaagg	gtttagtagtac	cagcgcgagg	tgctctcctt	gcagagtcct	120
gtgtctggca	gggccacgca	atgccctttg	tactggggga	aatggatgcg	ctggagctcg	180
tcnaanccac	tcgtgtat	ttcacangca	gcctcctccg	aagcctccgg	gcagttgggg	240
gtgtcgtcac	actccactaa	actgtcgatn	cancagccca	ttgctgcagc	ggaactgggt	300
gggctgacag	gtgccagaac	acactggatn	ggcctttcca	tggaagggcc	tgggggaaat	360
cncctnancc	caaactgcct	ctaaaaggcc	accttgacac	ccccgacagg	ctagaaatgc	420
actcttcttc	ccaaaggtag	ttgttcttgt	tgcccaagca	ncctccanca	aacccaaaanc	480
ttgcaaaatc	tgctccgtgg	gggtcatnnn	taccanggtt	ggggaaanaa	acccggcngn	540
ganccncctt	gtttgaatgc	naaggnaata	atcctcctgt	cttgcttggg	tggaanagca	600
caattgaaat	gttaacnttg	ggccnggttc	cncnnggttg	gtctgaaact	aatcacctgc	660
actggaaaaa	ggtangtgcc	ttccttgaat	tcccaaan	cccctngntt	tggttntttt	720
ctcctctncc	ctaaaaatcg	tnttcccccc	centangggc			760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(724)
 <223> n = A,T,C or G

<400> 38						
tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttcnnaaat	tgccaacccc	cctcnnccaa	atnnccattt	ccgggggggg	gttccaaacc	120
caaattaat	ttgganttta	aattaaatnt	tnattngggg	aanaanccaa	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccctn	gaaaccctng	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggt	300
ngattttaaac	ccccttnant	tnttttnacc	cnngnctnaa	ntatttngnt	tccgggtgtt	360
tcctnttaan	cntnggtaac	tcccngtaat	gaannnccct	aanccaatta	aaccgaattt	420
tttttgaaat	ggaaattccn	ngggaattna	ccgggggttt	tcccnttttg	gggccatncc	480
ccncttttgc	gggtttgggn	ntaggttgaa	ttttttnang	ncccaaaaaa	ncccccaana	540
aaaaaactcc	caagnnttaa	ttngaattnc	ccccttccca	ggccttttgg	gaaaggnggg	600
ttnttggggg	ccngggantt	cnttcccccn	ttncncccc	ccccccnggt	aaanggttat	660

ngnnttttgggt ttttgggccc cttnanggac cttccggatn gaaattaaat ccccgggncg 720
gccg 724

<210> 39
<211> 751
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(751)
<223> n = A,T,C or G

<400> 39
tttttttttt tttttctttg ctcacattta atttttattt tgattttttt taatgctgca 60
caacacaata tttatttcat ttgtttcttt tatttcattt tatttgtttg ctgctgctgt 120
tttatttatt tttactgaaa gtgagaggga acttttgttg ctttttttcc tttttctgta 180
ggccgcctta agctttctaa atttggaaca tctaagcaag ctgaanggaa aaggggggtt 240
cgcaaaatca ctcgggggaa nggaaagggt gctttgttaa tcatgcccta tgggtgggtga 300
ttaactgctt gtacaattac ntttcacttt taattaattg tgctnaangc ttaattana 360
cttgggggtt ccttccccc accaaccn ctagacaaaa gtgccngccc tcaaantatg 420
tcccgccnnt cnttgaaaca cacngcngaa ngttctcatt ntcccnccnc caggtnaaaa 480
tgaagggtta ccatntttta cncacctcc acntggcnnn gcctgaatcc tcnaaaancn 540
ccttcaancn aatttctnng ccccggtcnc gcntnngtcc cncgggggt cgggaantn 600
cacccccnga annnntnnc naacnaaatt ccgaaaatat tcccnntcnc tcaattcccc 660
cnnagactnt cctcnnncn cncaattttt ttttnttcac gaacncgnnc cnnaaatgn 720
nnnnncctc cnetngtccn naatcnccan c 751

<210> 40
<211> 753
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(753)
<223> n = A,T,C or G

<400> 40
gtggtatttt ctgtaagatc aggtgttctt cctcgttagg tttagaggaa acaccctcat 60
agatgaaaac ccccccgaga cagcagcact gcaactgcca agcagccggg gtaggagggg 120
cgccctatgc acagctgggc ccttgagaca gcagggttc gatgtcaggc tcgatgtcaa 180
tggtctggaa gcggcggtg tacctgcgta ggggcacacc gtcaggggcc accagggaact 240
tctcaaagtt ccaggcaacn tcgttgcgac acaccggaga ccagggtgatn agcttgggggt 300
cggtcatacn cgcggtggcg tcgtcgttgg gagctggcag ggctccccgc aggaaggcna 360
ataaaagggt cgccccgca cgttcanc cgcattctc naanaccatg angttgggt 420
cnaaccacc accannccg acttcttga nggaattccc aaatctcttc gntcttgggc 480
ttctnctgat gccctanctg gttgcccn gn atgccaanca nccccancc ccgggggtcct 540
aaanaccn cctctentt tcatctgggt tntntcccc ggaccntggt tcctctcaag 600
ggancccata tctnaccan tactacnnt nccccccnt gnnaccanc cttctanngn 660
tcccccccg ncctctggcc cntcaaan gcttncaacna cctgggtctg ccttcccccc 720
tnccctatct gnaccccn tttgtctcan tnt 753

<210> 41
<211> 341
<212> DNA
<213> Homo sapien

<400> 41
actatatcca tcacaacaga catgttcat cccatagact tcttgacata gcttcaaatg 60
agtgaacca tccttgattt atatacatat atgttctcag tattttggga gcctttccac 120
ttctttaaac cttgttcatt atgaacactg aaaataggaa tttgtgaaga gttaaaaagt 180

18

tatagcttgt	ttacgtagta	agttttttgaa	gtctacattc	aatccagaca	cttagttgag	240
tgttaaactg	tgatttttta	aaaatatcat	ttgagaatat	tctttcagag	gtattttcat	300
ttttactttt	tgattaattg	tgtttttatat	attagggtag	t		341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42						
acttactgaa	tttagttctg	tgctcttcct	tatttagtgt	tgtatcataa	atactttgat	60
gtttcaaaca	ttctaaataa	ataattttca	gtggcttcac	a		101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43						
acatctttgt	tacagtctaa	gatgtgttct	taaatcacca	ttccttcctg	gtcctcaccc	60
tccagggtgg	tctcacactg	taattagagc	tattgaggag	tctttacagc	aaattaagat	120
tcagatgcct	tgctaagtct	agagttctag	agttatgttt	cagaaagtct	aagaaaccca	180
cctcttgaga	ggtcagtaaa	gaggacttaa	tatttcatat	ctacaaaatg	accacaggat	240
tggatacaga	acgagagtta	tcctggataa	ctcagagctg	agtacctgcc	cggggggccgc	300
tcgaa						305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(852)
 <223> n = A,T,C or G

<400> 44						
acataaatat	cagagaaaag	tagtctttga	aatattttacg	tccaggaggt	ctttgtttct	60
gattattttg	tggtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tcgggcattc	ttcccaaatt	tatataccag	tcttcgtcca	tccacacgct	180
ccagaatttc	tctttttag	taatatctca	tagctcggct	gagcttttca	taggtcatgc	240
tgctgttgtt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaacctga	300
agacgccctc	agatcgggtc	tcccatttta	ttaatcctgg	gttcttgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttgtgtctt	ttggtgtggc	420
acttggcagg	ggggtcttgc	tcctttttca	tatcaggtga	ctctgcaaca	ggaagggtgac	480
tggtgggtgt	catggagatc	tgagcccggc	agaaagtttt	gctgtccaac	aaatctactg	540
tgctaccata	gttggtgtca	tataaatagt	tctngtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagttctg	acaatgacat	tggtgtgtgga	ctggaacagg	tcactactgc	660
actggccgtt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gccgtccctg	720
ccgcccggtt	gaactcctgc	aaactcatgc	tgcaaaaggtg	ctcgccgttg	atgtcgaaact	780
cntggaaagg	gatacaattg	gcatccagct	ggttgggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45
 <211> 234
 <212> DNA
 <213> Homo sapien

<400> 45						
acaacagacc	cttgctcgtc	aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	120
gcctcgtttc	tggtctgggt	ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	180

tgaacgtgtc ggtggtgtct gaggaggtct gcagtaagct ctatgacccg ctgt 234

<210> 46
 <211> 590
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(590)
 <223> n = A,T,C or G

<400> 46
 acttttttatt taaatgttta taaggcagat ctatgagaat gatagaaaac atggtgtgta 60
 atttgatagc aatatttttg agattacaga gtttttagtaa ttaccaatta cacagttaaa 120
 aagaagataa tatattccaa gcanatacaa aatatctaata gaaagatcaa ggcaggaaaa 180
 tgantataac taattgacaa tggaaaatca attttaaatgt gaattgcaca ttatccttta 240
 aaagctttca aaanaaaanaa ttattgcagt ctanttaatt caaacagtgt taaatggtat 300
 caggataaan aactgaaggg canaaagaat taattttcac ttcattgtaac ncacccanatt 360
 ttacaatggc ttaaattgcan ggaaaaagca gtggaagtag ggaagtantc aaggtccttc 420
 tggctctctaa tctgccttac tctttgggtg tggctttgat cctctggaga cagctgccag 480
 ggctcctgtt atatccacaa tcccagcagc aagatgaagg gatgaaaaag gacacatgct 540
 gccttccttt gaggagactt catctcactg gccaacactc agtcacatgt 590

<210> 47
 <211> 774
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(774)
 <223> n = A,T,C or G

<400> 47
 acaaggggggc ataatgaagg agtgggggana gatttttaaag aaggaaaaaa aacgaggccc 60
 tgaacagaat tttcctgnac aacgggggctt caaaataaatt ttcttgggga gggtcaagac 120
 gcttactgc ttgaaactta aatggatgtg ggacanaaatt ttctgtaatg accctgaggg 180
 cattacagac gggactctgg gaggaaggat aaacagaaaag gggacaaaagg ctaatcccaa 240
 aacatcaaag aaaggaagggt ggcgtcatat ctcccagcct acacagttct ccagggtctct 300
 cctcatccct ggaggacgac agtggaggaa caactgacca tgtcccagg ctctgtgtg 360
 ctggctcctg gtcttcagcc cccagctctg gaagcccacc ctctgctgat cctgcgtggc 420
 ccacactcct tgaacacaca tcccaggtt atattccttg acatggctga acctcctatt 480
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcac cctccaaacc 540
 acggcatggg aagcctttct gacttgcttg attactccag catcttggaa caatccctga 600
 ttcccactc cttagaggca agatagggtg gtttaagagta gggctggacc acttggagcc 660
 aggtgctgg cttcaaattn tggctcattt acgagctatg ggaccttggg caagtnatct 720
 tcacttctat gggcntcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

<210> 48
 <211> 124
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(124)
 <223> n = A,T,C or G

<400> 48
 canaaattga aattttataa aaaggcattt ttctcttata tccataaaat gatataattt 60
 ttgcaantat anaaatgtgt cataaattat aatgttcctt aattacagct caacgcaact 120

tggt 124

<210> 49
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 49
 gccgatgcta ctatitttatt gcaggaggtg ggggtgtttt tattattctc tcaacagctt 60
 tgtggctaca ggtggtgtct gactgcatna aaaanttttt tacgggtgat tgcaaaaatt 120
 ttagggcacc catatcccaa gcantgt 147

<210> 50
 <211> 107
 <212> DNA
 <213> Homo sapien

<400> 50
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatataattgc 60
 atggtttgag gttaggagga gttaggcata tgttttggga gaggggt 107

<210> 51
 <211> 204
 <212> DNA
 <213> Homo sapien

<400> 51
 gtcctaggaa gtctagggga cacacgactc tggggtcacg gggccgacac acttgcacgg 60
 cggaaggaa aggcagagaa gtgacaccgt cagggggaaa tgacagaaag gaaaatcaag 120
 gccttgcaag gtcagaaagg ggactcaggg cttccaccac agccctgcc cacttgcca 180
 cctccctttt gggaccagca atgt 204

<210> 52
 <211> 491
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(491)
 <223> n = A,T,C or G

<400> 52
 acaaagataa catttatctt ataacaaaaa tttgatagtt ttaaaggtta gtattgtgta 60
 gggatatttc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca 120
 ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ccttaaaaaa 180
 aaaacttctt gtatcaattt cttttgttca aaatgactga cttaantatt tttaaattatt 240
 tcanaaacac ttctcaaaaa attttcaana tggtagcttt canatgtnc ctcagtccca 300
 atgttgctca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc 360
 atgcaacagt gtcttttctt tnccttttct tttttttttt ttacaggcac agaaactcat 420
 caattttatt tggataacaa agggctccca aattatattg aaaaataaat ccaagttaat 480
 atcactcttg t 491

<210> 53
 <211> 484
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(484)
 <223> n = A,T,C or G

<400> 53
 acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga 60
 gtattaacag ttgctgaagt ttgggtatttt tatgcagcat tttctttttg ctttgataac 120
 actacagaac ccttaaggac actgaaaatt agtaagtaaa gttcagaaac attagctgct 180
 caatcaaate tctacataac actatagtaa ttaaaacgtt aaaaaaaagt gttgaaatct 240
 gcactagtat anaccgctcc tgtcaggata anactgcttt ggaacagaaa gggaaaaanc 300
 agctttgant ttctttgtgc tgatanggag aaaggctgaa ttaccttggt gcctctccct 360
 aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncg 420
 tancttgant ctgtgtattc caggancagg cggtatggaat gggccagccc ncggatgttc 480
 cant 484

<210> 54
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 54
 actaaacctc gtgcttgtga actccataca gaaaacgggtg ccatccctga acacggctgg 60
 ccactgggta tactgtgac aaccgcaaca acaaaaacac aaatccttgg cactggctag 120
 tctatgtcct ctcaagtgcc tttttgtttg t 151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggcttg tctccgggtg gttcccggcg cccccacgg tccccagaac ggacactttc 60
 gccctccagt ggatactcga gccaaagtgg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggcggtatgt cgttgggttat atacaaatat gtcattttat gtaagggact tgagtatact 60
 tggatttttg gtatctgtgg gttgggggga cggtccagga accaatacc catggatacc 120
 aagggacaac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggegc 60
 gactgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120
 tctcantggg ctggatncat gcagggt 147

<210> 58

<211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(198)
 <223> n = A,T,C or G

<400> 58
 acagggatat aggtttnaag ttattgtnat tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata catttatcct ttaaaaaaga tgtaaactctt aattttttatg ccactctatta 120
 atttaccaat gagttacctt gtaaatagaga agtcatgata gcactgaatt ttaactagtt 180
 ttgacttcta agtttggt 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59
 acaacaaatg ggttgtagg aagtcttatac agcaaaactg gtgatggcta ctgaaaagat 60
 ccattgaaaa ttatcattaa tgatttttaa tgacaagtta tcaaaaactc actcaatttt 120
 cacctgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa 180
 tacagtcaat aaatgacaaa gccagggcct acaggtgggt tccagacttt ccagaccag 240
 cagaaggaat ctattttatac acatggatct ccgtctgtgc tcaaaatacc taatgatatt 300
 tttcgtcttt attggacttc tttgaagagt 330

<210> 60
 <211> 175
 <212> DNA
 <213> Homo sapien

<400> 60
 accgtgggtg ctttctacat tcctgacggc tccttcacca acatctgggt ctacttcggc 60
 gtcgtgggct ctttctctt cctctcctc cagctgggtgc tgctcatcga ctttgccgcac 120
 tcctggaacc agcggtaggt gggcaaggcc gaggagtgcg attcccgtgc ctggt 175

<210> 61
 <211> 154
 <212> DNA
 <213> Homo sapien

<400> 61
 accccacttt tcctcctgtg agcagttctg acttctcact gctacatgat gaggggtgagt 60
 gggtgttgct cttcaacagt atctccctt ttccggatct gctgagccgg acagcagtgc 120
 tggactgcac agccccgggg ctccacattg ctgt 154

<210> 62
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 62
 cgctcgagcc ctatagtgag tcgtattaga 30

<210> 63
 <211> 89
 <212> DNA
 <213> Homo sapien

<400> 63

acaagtcatt tcagcaccct ttgctcttca aaactgacca tcttttatat ttaatgcttc 60
ctgtatgaat aaaaatgggt atgtcaagt 89

<210> 64
<211> 97
<212> DNA
<213> Homo sapien

<400> 64
accggagtaa ctgagtcggg acgctgaatc tgaatccacc aataaataaa ggttctgcag 60
aatcagtga tccaggattg gtccttggat ctggggt 97

<210> 65
<211> 377
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1) ... (377)
<223> n = A,T,C or G

<400> 65
acaacaanaa ntcccttctt taggccactg atggaaacct ggaacccctt tttgatggca 60
gcatggcgtc ctaggccttg acacagcggc tgggggtttg gctntcccaa accgcacacc 120
ccaaccctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt 180
tcggtcataa natgaaatcc caanggggac agaggtcagt agaggaagct caatgagaaa 240
ggtgctgttt gtcagccag aaaacagctg cctggcattc gccgctgaac tatgaaccg 300
tgggggtgaa ctaccccan gaggaatcat gcctgggcga tgcaanggtg ccaacaggag 360
gggcgggag agcatgt 377

<210> 66
<211> 305
<212> DNA
<213> Homo sapien

<400> 66
acgcctttcc ctcagaattc agggaagaga ctgtcgctg ccttcctccg ttgttgctg 60
agaacccgtg tgccccttc caccatatcc accctcgctc catctttgaa ctcaaacacg 120
aggaaactaac tgcaccctgg tctctcccc agtccccagt tcaccctcca tccctcacct 180
tcctccactc taagggatat caacactgcc cagcacaggg gccctgaatt tatgtggtt 240
ttatatattt ttaataaga tgcactttat gtcattttt aataaagtct gaagaattac 300
tggtt 305

<210> 67
<211> 385
<212> DNA
<213> Homo sapien

<400> 67
actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
ggtcggacca gccacatctc atgtgcaaga ttgccagca gacatcaggt ctgagagttc 120
cccttttaaa aaaggggact tgcttaaaaa agaagtctag ccacgattgt gtagagcagc 180
tgtgctgtgc tggagattca cttttgagag agttctctc tgagacctga tctttagagg 240
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgctt 300
cctctcccag ggccccagcc tggccacacc tgcttacagg gcactctcag atgccatac 360
catagtttct gtgctagtgg accgt 385

<210> 68
<211> 73
<212> DNA
<213> Homo sapien

<400> 68
 acttaaccag atatattttt accccagatg gggatattct ttgtaaaaaa tgaaaataaa 60
 gtttttttaa tgg 73

<210> 69
 <211> 536
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(536)
 <223> n = A,T,C or G

<400> 69
 actagtcag tgtggtggaa ttccattgtg ttgggggctc tcaccctcct ctctgcagc 60
 tccagctttg tgctctgcct ctgaggagac catggcccag catctgagta cctgctgct 120
 cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180
 cccgggtggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg cccttcactt 240
 cgccatcagc gagtataaca aggccaccaa agatgactac tacagacgtc cgctgcgggt 300
 actaagagcc aggcaacaga ccgttggggg ggtgaattac ttcttcgacg tagaggtggg 360
 ccgaaccata tgtaccaagt ccagcccaa cttggacacc tgtgccttcc atgaacagcc 420
 agaactgcag aagaaacagt tgtgctcttt cgagatctac gaagttccct ggggagaaca 480
 gaangtcctt gggtgaaatc caggtgtcaa gaaatcctan ggatctgttg ccaggc 536

<210> 70
 <211> 477
 <212> DNA
 <213> Homo sapien

<400> 70
 atgaccctta acagggggcc tctcagccct cctaattgacc tccggcctag ccatgtgatt 60
 tcacttccac tccataacgc tctcataact aggcctacta accaaccacac taaccatata 120
 ccaatgatgg cgcgatgtaa cagagaaaag cacataccaa ggccaccaca caccacctgt 180
 ccaaaaaggc cttcgatacg ggataatcct atttattacc tcagaagttt ttttcttcgc 240
 agggattttt ctgagccttt taccactcca gcctagcccc taccctccaa ctaggagggc 300
 actggccccc aacaggcatc accccgctaa atcccctaga agtcccactc ctaaaacacat 360
 ccgtattact cgcatacagga gtatcaatca cctgagctca ccatagtcta atagaaaaca 420
 accgaaacca aattattcaa agcactgctt attacaattt tactgggtct ctatttt 477

<210> 71
 <211> 533
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(533)
 <223> n = A,T,C or G

<400> 71
 agagctatag gtacagtgtg atctcagctt tgcaaacaca ttttctacat agatagtact 60
 aggtattaat agatatgtaa agaaagaaat cacaccatta ataatggtaa gattgggttta 120
 tgtgatttta gtggtatttt tggcaccctt atatattgtt tccaaacttt cagcagtgat 180
 attatttcca taacttaaaa agtgagtgtg aaaaagaaaa tctccagcaa gcattctcatt 240
 taaataaagg tttgtcatct ttaaaaatac agcaatatgt gactttttta aaaagctgtc 300
 aaataggtgt gaccctacta ataattatta gaaatacatt taaaaacatc gagtacctca 360
 agtcagtgtg ccttgaaaaa tatcaaatat aactcttaga gaaatgtaca taaaagaatg 420
 cttcgttaatt ttggagtang aggttccctc ctcaattttg tattttttaa aagtacatgg 480
 taaaaaaaaa aattcacaac agtatataag gctgtaaaaa gaagaattct gcc 533

<210> 72

<211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tattacggaa aaacacacca cataattcaa ctancaaaga anactgcttc agggcggtgta 60
 aaatgaaagg cttccaggca gttatctgat taaagaacac taaaagaggg acaaggctaa 120
 aagccgcagg atgtctacac tatancaggc gctatttggg ttggctggag gagctgtgga 180
 aaacatggan agattgggtc tgganatcgc cgtggctatt cctcattgtt attacanagt 240
 gaggttctct gtgtgcccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaaccag aaagaaagcc caactagatc ctcagaaanac 360
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgcagcna naaaccggtt cttctaagca aacncagggtg atgatggcna 480
 aaatacaccc cctcttgaag naccnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgccagc actggtgccca gtaccagtag caataacagt gccagtgccca gtgccagcac 60
 cagtgggtggc ttcagtgtct gtgccagcct gaccgccact ctcacatttg ggctcttcgc 120
 tggccttggg ggagctgggt ccagcaccag tggcagctct ggtgcctgtg gtttctccta 180
 caagtgaagt tttagatatt gttaatcctg ccagtccttc tcttcaagcc aggggtgcatc 240
 ctcagaaacc tactcaacac agcactctag gcagccacta tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatttctga aaaaaaaaaa aaaaaaaggg cggccgctcg 360
 antctagagg gcccgtttta acccgctgat cagcctcgac tgtgccttct anttgccagc 420
 catctgttgt ttgccctcc cccgntgcct tccttgacct tggaaagtgc cactcccact 480
 gtcctttcct aantaaaaat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60
 ttatcagctt aactcagata aaatcattga aagtaataag gtaaaagcta gtctctaact 120
 tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180
 cattgtatgc atggaaacat ggaggaacag tattacagtg tcctaccact ctaatcaaga 240
 aaagaattac agactctgat tctacagtga tgattgaatt ctaaaaatgg taatcattag 300
 ggcttttgat ttataanact ttgggtactt atactaaatt atggtagtta tactgccttc 360
 cagtttgctt gatataattg ttgatattaa gattcttgac ttatatattg aatgggttct 420
 actgaaaaan gaatgatata ttcttgaaga catcgatata catttattta cactcttgat 480
 tctacaatgt agaaaaatgaa ggaaatgcc ccaattgtat ggtgataaaa gtcccgt 537

26

<210> 75
 <211> 467
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(467)
 <223> n = A,T,C or G

<400> 75
 caaanacaat tgttcaaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60
 tgcattattac acgtacctcc tcctgtctcct caagtagtgt ggtctatattt gccatcatca 120
 cctgtgtgtc gcttagaaga acggctttct gctgcaangg agagaaatca taacagacgg 180
 tggcacaagg aggccatctt ttcctcatcg gttattgtcc ctagaagcgt cttctgagga 240
 tctagtggg ctttctttct gggtttgggc catttcantt ctcagtgtg tactattcta 300
 tcattattgt ataacgggtt tcaaaccngt gggcacncag agaacctcac tctgtaataa 360
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgttnt tccagagctc 420
 ctccagccaa cccaaatagc cgctgctatn gtgtagaaca tccctgn 467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(400)
 <223> n = A,T,C or G

<400> 76
 aagctgacag cattcgggccc gagatgtctc gctccgtggc cttagctgtg ctgcgcgtac 60
 tctctcttcc tggcctggag gctatccagc gtactccaaa gattcagggt tactcacgtc 120
 atccagcaga gaattgaaaag tcaaatttcc tgaattgcta tgtgtctggg tttcatccat 180
 ccgacattga agttgactta ctgaagaatg gagagagaat tgaaaaagt gagcattcag 240
 acttgtcttt cagcaaggac tgggtctttct atctcttgta ctacactgaa ttcaccccca 300
 ctgaaaaaga tgagtatgcc tgccgtgtga accatgtgac tttgtcacag cccaagatng 360
 tttagtggga tcganacatg taagcagcan catgggaggt 400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77
 ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct 60
 ccagctgccc cggcggggga tgcgaggctc ggagcaccct tgcccggctg tgattgctgc 120
 caggcactgt tcatctcagc ttttctgtcc ctttgtctcc ggcaagcgt tctgtgaaa 180
 gttcatatct ggagcctgat gtcttaacga ataaaggctc catgctccac ccgaaaaaaa 240
 aaaaaaaaaa 248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78
 actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca 60
 tcacccagac cccgccctgc ccgtgcccac cgctgctgct aacgacagta tgatgcttac 120
 tctgtactc ggaaactatt tttatgtaat taatgtatgc tttcttgttt ataaatgctc 180
 gatttaaaaa aaaaaaaaaa a 201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 tttaggcagt gctagtaatt tcctcgtaat gattctgtta ttactttcct attcctttatt 120
 cctcttttctt ctgaagatta atgaagttga aaattgaggt ggataaatat aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcaaaatt 240
 atgcaagtta gtaattactc agggttaact aaattacttt aatatgctgt tgaacctact 300
 ctgttccttg gctagaaaaa attataaaaca ggactttgtt agtttgggaa gccaaattga 360
 taatattcta tgtttctaaa gttgggctat acataaanta tnaagaaata tgggaatttta 420
 ttcccaggaa tatgggggtc atttatgaat antaccggg anagaagttt tgantnaaac 480
 cngttttggt taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540
 aaaaaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga 60
 ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggccctgttt 180
 gcaattcacg ttgccacctc caacttaaac attcttcata tgtgatgtcc ttagtcacta 240
 aggttaaaact ttcccaccca gaaaaggcaa cttagataaa atcttagagt actttcatac 300
 tcttctaagt cctcttccag cctcactttg agtcctcctt gggggttgat aggaantntc 360
 tcttggtttt ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntaaaaat 420
 gctgaaaaaa ttaaatgtt ctggtttcnc tttaaaaaaa aaaaaaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg tatgcntcn ctgtgnggtt attgttgctg ccaccctgga ggagcccagt 60
 ttcttctgta tctttctttt ctgggggatc ttcttggtc tgccctcca tcccagcct 120
 ctcatcccca tcttgcaatt ttgctagggt tggaggcgct ttctggttag cccctcagag 180
 actcagtcag cgggaataag tcctaggggt ggggggtgtg gcaagccggc ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A,T,C or G

<400> 82
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactggtgcc 60
 agtaccagta ccaataacat gccagtgcc gtgccagcac cagtgggtggc ttcagtgtctg 120
 gtgccagcct gaccgccact ctacatttg ggctcttcgc tggccttggg ggagctggtg 180
 ccagcaccag tggcagctct ggtgcctgtg gtttctccta caagtgagat tttagatatt 240
 gttaatcctg ccagtctttc tcttcaagcc aggggtgcac ctcagaaacc tactcaacac 300
 agcactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
 ccatttcaaa aaaaaaaaaa aaa 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(494)
 <223> n = A,T,C or G

<400> 83
 accgaattgg gaccgctggc ttataagcga tcatgtcctc cagtattacc tcaacgagca 60
 gggagatcga gtctatacgc tgaagaaatt tgaccgatg ggacaacaga cctgctcagc 120
 ccatcctgct cggttctccc cagatgacaa atactctcga caccgaatca ccatcaagaa 180
 acgcttcaag gtgctcatga cccagcaacc gcgccctgtc ctctgagggt ccttaaactg 240
 atgtcttttc tgccacctgt taccctcgg agactccgta accaaactct tcggactgtg 300
 agccctgatg cctttttgccc agccatactc tttggentcc agtctctcgt ggcgattgat 360
 tatgcttggt tgaggcaatc atggtggcat caccatnaa gggaacacat ttganttttt 420
 tttncatat tttaaattac naccagaata ntccagaata aatgaattga aaaactctta 480
 aaaaaaaaaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A,T,C or G

<400> 84
 gctggtagcc tatggcgtgg ccacggangg gctcctgagg cacgggacag tgacttccca 60
 agtatcctgc gccgcgtctt ctaccgtccc tacctgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct cgtcggagcc cggcttctgg 180
 gcacaccctc ctggggccca ggccggcacc tgcgtctccc agtatgccaa ctggctggtg 240
 gtgctgtccc tcgtcatctt cctgctcgtg gccaacatcc tgctggtcac ttgctcattg 300
 ccatgttcag ttacacattc ggcaaagtac agggcaacag cnatctctac tgggaaggcc 360
 agcgttnccg cctcatccgg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(481)

<223> n = A,T,C or G

<400> 85

gagtttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgtc	atactgtagg	tttgccacca	cctcctgcat	cttggggcgg	ctaatatcca	120
ggaaactctc	aatcaagtca	ccgtcnaatna	aacctgtggc	tggttctgtc	ttccgctcgg	180
tgtgaaagga	tctccagaag	gagtgtctga	tcttccccac	acttttgatg	actttattga	240
gtcgattctg	catgtccagc	aggaggttgt	accagctctc	tgacagttag	gtcaccagcc	300
ctatcatgcc	nttgaacgtg	ccgaagaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagattctg	cattaccaga	nagccgtggc	aaaaganatt	gacaactcgc	ccaggnggaa	420
aaagaacacc	tcttggaagt	gctngccgct	cctcgtccnt	tggtggnggc	gcntnccttt	480
t						481

<210> 86

<211> 472

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(472)

<223> n = A,T,C or G

<400> 86

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgctg	agaattcatt	60
acttggaana	gcaacttnaa	gcctggacac	tggtattaaa	attcacaata	tgcaacactt	120
taaacagtgt	gtcaatctgc	tcccttactt	tgatcatcacc	agtctgggaa	taagggtatg	180
ccctattcac	acctgttaaa	agggcgctaa	gcatttttga	ttcaacatct	ttttttttga	240
cacaagtccg	aaaaaagcaa	aagtaaacag	ttnttaattt	gtagccaat	tcactttctt	300
catgggacag	agccatttga	tttaaaaagc	aaattgcata	atattgagct	ttgggagctg	360
atatntgagc	ggaagantag	cctttctact	tcaccagaca	caactccttt	catattggga	420
tgttnacnaa	agttatgtct	cttacagatg	ggatgctttt	gtggcaattc	tg	472

<210> 87

<211> 413

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(413)

<223> n = A,T,C or G

<400> 87

agaaaccagt	atctctnaaa	acaacctctc	ataccttggt	gacctaat	tgtgtgcgtg	60
tgtgtgtgcg	cgcataattat	atagacaggc	acatcttttt	tacttttgta	aaagcttatg	120
cctctttggg	atctatatct	gtgaaagtgt	taatgatctg	ccataatgtc	ttggggacct	180
ttgtcttctg	tgtaaatggg	actagagaaa	acacctatnt	tatgagtcaa	tctagttngt	240
tttattcgac	atgaaggaaa	tttccagatn	acaacactna	caaactctcc	cttgactagg	300
ggggacaaa	aaaagcnaaa	ctgaacatna	gaaacaattn	cctgggtgaga	aattncataa	360
acagaaattg	ggtngtatat	tgaaanann	catcattnaa	acgttttttt	ttt	413

<210> 88

<211> 448

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(448)

<223> n = A,T,C or G

```

<400> 88
cgcagcgggt cctctctatc tagctccagc ctctcgcttg cccactccc cgcgtcccgc      60
gtcctagccn accatggccg ggccccctgc cgccccctg ctctgtgtgg ccactcctggc      120
cgtggccctg gccgtgagcc ccgcggcccg ctccagtccc ggcaagccgc cgcgcctggg      180
gggaggccca tggacccgcg gtggaagaag aaggtgtgcg gcgtgactg gactttgccc      240
tcggcnanta caacaaacc gcaacnactt ttaccnagcn cgcgctgcag gttgtgccgc      300
cccaancaaa ttgttactng gggtaantaa ttcttggaag ttgaacctgg gccaaacnng      360
tttaccagaa ccnagccaat tngaacaatt nccccccat aacagcccct tttaaaaagg      420
gaancantcc tgntcttttc caaatTTT      448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(463)
<223> n = A,T,C or G

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```

<400> 89
gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gagtttatca      60
gtagtgattc tgccaaagtt ggtgttgtaa catgagtatg taaaatgtca aaaaattagc      120
agaggctctag gtctgcatat cagcagacag tttgtccgtg tattttgtag ccttgaagtt      180
ctcagtgaca agttnnttct gatgcgaagt tctnattcca gtgttttagt cctttgcac      240
tttnatgttn agacttgccct ctntnaaatt gcttttgtnt tctgcaggta ctatctgtgg      300
tttaacaaaa tagaannact tctctgcttn gaanatttga atatcttaca tctnaaaatn      360
aattctctcc ccatannaaa acccangccc ttgggganaat ttgaaaaaang gntccttcnn      420
aattcnnana anttcagntn tcatacaaca naacngganc ccc      463

```

```

<210> 90
<211> 400
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

```

```

<400> 90
agggattgaa ggtctnttnt actgtcggac tgttcancca ccaactctac aagttgctgt      60
cttccactca ctgtctgtaa gcntnttaac ccagactgta tcttcataaa tagaacaagt      120
tcttcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccact      180
tcctttgtta agacttcacg tggtaaagtc ttaagttttg tagaaaggaa ttttaattgct      240
cgttctctaa caatgtcctc tccttgaagt atttggtgga acaacccacc tnaagtcctt      300
ttgtgcatcc attttaaata tacttaatag ggcattggtn cactagggtta aattctgcaa      360
gagtcactctg tctgcaaaaag ttgcgttagt atatctgcc      400

```

```

<210> 91
<211> 480
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(480)
<223> n = A,T,C or G

```

```

<400> 91
gagctcggat ccaataatct ttgtctgagg gcagcacaca tatncagtgc catggnaact      60

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ggctaccccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcctcttt	gactaccgtg	tgccagtgt	ggtgattctc	acacacctcc	nncgcgtctt	180
tgtggaaaaa	ctggcacttg	nctggaacta	gcaagacatc	acttacaaat	tcacccacga	240
gacacttgaa	aggtgtaaca	aagcgactct	tgcattgctt	tttgtccctc	cggcaccagt	300
tgtcaatact	aaccgcgtgg	tttgcctcca	tcacatttgt	gatctgtagc	tctggatata	360
tctcctgaca	gtactgaaga	acttcttctt	ttgtttcaaa	agcaactctt	ggcgcctgtt	420
ngatcagggt	cccatttccc	agtccgaatg	ttcacatggc	atatnttact	tcccacaaaa	480

<210> 92
 <211> 477
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 92	
atacagccca	natccccacca
gggtcccgtg	tagccccagc
cccacgcagg	cagcagcggg
taantgcagg	aagagggtga
tgcagcgaaa	ctcctcgatg
gaaccttccg	cctgttctct
accagcggac	aaacggcggt
aggaacggcn	ccagcgtgtc
cgaagatgcg	cttgttgact
gactctccac	ctgctggaag
gccgggtcaat	gaactccact
gtccaccagg	atgcccagct
ggaagcgaat	gangcccagg
gccttgcccc	ccgctnacac
tgcccantgt	gtcgcgctcc
aatggcg	
	60
	120
	180
	240
	300
	360
	420
	477

<210> 93
 <211> 377
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(377)
 <223> n = A,T,C or G

<400> 93	
gaacggctgg	accttgccctc
agtcctgagca	gccccagacc
cgcctcaatg	cagaaccant
tgattttact	tggaatttct
caacaacaaa	ataacatgtt
aagaaaatat	tactgttaca
ataaatatat	tattaaa
gctggcagga	ataccttggc
gaagctaagc	ctgcctcttg
ctgtgtttag	agttaagagt
tagcttttcc	caatgctaata
gttggtataaa	agtangtgat
gcaantttctg	tatttattgg
	tinctctggaa
	377
	60
	120
	180
	240
	300
	360

<210> 94
 <211> 495
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(495)
 <223> n = A,T,C or G

<400> 94	
ccctttgagg	ggttagggtc
cgagctgang	cagatttccc
ccaaggaaaag	accaccttct
gaaggcccca	ttccgggggt
cagttcccag	tggaagaaac
acagtgaccc	cagagccctg
ggggacatgg	gctggagggc
gttccccgag	gaggaaggga
aggccaggag	aantgcgtgc
ggctatagtc	tctgaccctt
aggacctaga	ggcaccaagg
aggggctctg	tgtgcccccc
	240
	60
	120
	180

acgaggaana	ggccctgant	cctgggatca	nacacccctt	cacgtgtatc	cccacacaaa	300
tgcaagctca	ccaaggtccc	ctctcagtc	cttccctaca	ccctgaacgg	nactggccc	360
acacccaccc	agancancca	cccgccatgg	ggaatgtnc	caaggaatcg	cngggcaacg	420
tggactctng	tccnnaagg	gggcagaatc	tccaatagan	gganngaacc	cttgctnana	480
aaaaaaaaana	aaaaa					495

<210> 95

<211> 472

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(472)

<223> n = A,T,C or G

<400> 95

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgccgag	agcggacttt	gtaattgttg	gagaataact	gctgaatttt	120
tagctgtttt	gagttgattc	gcaccactgc	accacaactc	aatatgaaaa	ctatttnact	180
tatttattat	cttgtgaaaa	gtatacaatg	aaaattttgt	tcatactgta	tttatcaagt	240
atgatgaaaa	gcaatagata	tatatctctt	tattatgttn	aattatgatt	gccattatta	300
atcggcaaaa	tgtggagtgt	atgttctttt	cacagtaata	tatgcctttt	gtaacttcac	360
ttggttattt	tattgtaaat	gaattacaaa	attcttaatt	taagaaaatg	gtangttata	420
tttanttcan	taatttcttt	ccttgttttac	gttaattttg	aaaagaatgc	at	472

<210> 96

<211> 476

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(476)

<223> n = A,T,C or G

<400> 96

ctgaagcatt	tcttcaaact	tntctacttt	tgtcattgat	acctgtagta	agttgacaat	60
gtgggtgaaat	ttcaaaaatta	tatgtaactt	ctactagtgt	tactttctcc	cccaagtctt	120
ttttaactca	tgattttttac	acacacaatc	cagaacttat	tatatagcct	ctaagtcttt	180
attcttcaca	gtagatgatg	aaagagtcct	ccagtgtctt	gngcanaatg	ttctagntat	240
agctggatac	atacngtggg	agttctataa	actcatacct	cagtgggact	naaccaaaat	300
tgtgttagtc	tcaattccta	ccacactgag	ggagcctccc	aaatcactat	attcttatct	360
gcaggtaactc	ctccagaaaa	acngacaggg	caggcttgca	tgaaaaagtn	acatctgcgt	420
tacaaagtct	atcttctcta	nangtctgtn	aaggaacaat	ttaatcttct	agcttt	476

<210> 97

<211> 479

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(479)

<223> n = A,T,C or G

<400> 97

actctttcta	atgctgatat	gatcttgagt	ataagaatgc	atatgtcact	agaatggata	60
aaataatgct	gcaaaacttaa	tgttcttatg	caaaatggaa	cgctaataga	acacagctta	120
caatcgcaaa	tcaaaaactca	caagtgtctca	tctgttgtag	atttagtgta	ataagactta	180
gattgtgctc	cttcgggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctggt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300

gtgattatna	aattaatcac	aaattttcact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnttttta	natcaaagta	ttttgtgttt	ggaantgttn	aaatgaaatc	tgaatgtggg	420
ttcnatctta	ttttttcccn	gacnactant	tnctttttta	gggnctattc	tganccatc	479

<210> 98
 <211> 461
 <212> DNA
 <213> Homo sapien

<400> 98						
agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
tgctagtcc	tgatcatctat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaattctatt	cctacttgta	cggactttga	180
agtgattcag	tttctctac	ggatgagaga	ctggctcaag	aatatcctca	tgcagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	accatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tggtgccggc	cgtttatgaa	ctgaccaccc	420
tttggaataa	tcttgacgct	cctgaacttg	ctcctctgcy	a		461

<210> 99
 <211> 171
 <212> DNA
 <213> Homo sapien

<400> 99						
gtggccgcgc	gcaggtgttt	cctcgtaccg	cagggccccc	tcccttcccc	aggcgctccct	60
cggcgctct	gcgggcccga	ggaggagcgg	ctggcggtg	gggggagtgt	gaccacccct	120
cggtgagaaa	agccttctct	agcgatctga	gaggcggtgc	ttgggggtac	c	171

<210> 100
 <211> 269
 <212> DNA
 <213> Homo sapien

<400> 100						
cggccgcaag	tgcaactcca	gctggggccg	tgccgacgaa	gattctgccca	gcagttggtc	60
cgactgcgac	gacggcgggc	gcgacagtcg	caggtgcagc	gcgggcgcct	ggggtcttgc	120
aaggctgagc	tgacgccgca	gaggctcgtg	cacgtcccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggg	gaagcgggag	gcctcgggga	gcccctcggg	aaggcgggcc	240
cgagagatac	gcaggtgcag	gtggccgc				269

<210> 101
 <211> 405
 <212> DNA
 <213> Homo sapien

<400> 101						
tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgcttttatg	ggggcggggt	ggggtagggg	aaacgaagca	aataacatgg	180
agtgggtgca	ccctccctgt	agaacctggg	tacaaagctt	ggggcagttc	acctggctcg	240
tgaccgtcat	tttcttgaca	tcaatgttat	tagaagtcag	gatattcttt	agagagtcca	300
ctgttctgga	gggagattag	ggtttcttgc	caaatccaac	aaaatccact	gaaaaagttg	360
gatgatcagt	acgaataccg	aggcatattc	tcatatcggt	ggcca		405

<210> 102
 <211> 470
 <212> DNA
 <213> Homo sapien

<400> 102						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60

ggcacttaat	ccattttttat	ttcaaaatgt	ctacaaat	aatcccatta	tacgggtattt	120
tcaaaatcta	aattattcaa	attagccaaa	tccttaccaa	ataataccca	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	aattaaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaaca	ttttaaggaa	ctaaaataaaa	aaaaaacact	300
ccgcaaaggt	taaaggggaac	aacaaattct	tttacaacac	cattataaaa	atcatactctc	360
aaatcttagg	ggaatatata	cttcacacgg	gatcttaact	tttactcact	ttgtttattt	420
ttttaaacca	ttgtttgggc	ccaacacaat	ggaatccccc	ctggactagt		470

<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

<400> 103						
tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttatttttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgctaaaagt	180
gaaaaatctt	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaac	atccaaattc	240
atttttcttg	tctttaaaat	tatctaattc	ttccattttt	tccttattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagaaa	tggcacacaa	aacaaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggcttagat	ccttttatgt	480
ccatttttagt	cactaaacga	tatcaaagt	ccagaatgca	aaaggtttgt	gaacatttat	540
tcaaaagcta	atataagata	tttcacatac	tcattctttct	g		581

<210> 104
 <211> 578
 <212> DNA
 <213> Homo sapien

<400> 104						
tttttttttt	tttttttttt	tttttctctt	cttttttttt	gaaatgagga	tcgagttttt	60
cactctctag	atagggcag	aagaaaactc	atctttccag	ctttaaaata	acaatcaaat	120
ctcttatgct	atatcatatt	ttaagttaaa	ctaagtgcag	actggcttat	cttctcctga	180
aggaaatctg	ttcattcttc	tcattcatat	agttatatca	agtactacct	tgcatattga	240
gagggttttt	ttctctattt	acacatatat	ttccatgtga	atttgatca	aacctttatt	300
ttcatgcaaa	ctagaaaata	atgtttcttt	tgcataagag	aagagaacaa	tatagcatta	360
caaaactgct	caaattgttt	gttaagttat	ccattataat	tagttggcag	gagctaatac	420
aaatcacatt	tacgacagca	ataataaaac	tgaagtacca	gttaaatatc	caaaataatt	480
aaaggaacat	ttttagcctg	ggtataatta	gctaattcac	tttacaagca	tttattagaa	540
tgaattcaca	tgttattatt	cctagcccaa	cacaatgg			578

<210> 105
 <211> 538
 <212> DNA
 <213> Homo sapien

<400> 105						
tttttttttt	tttttcagta	ataatcagaa	caatatttat	ttttatat	aaaattcata	60
gaaaagtgcc	ttacatttaa	taaaagtgtg	tttctcaaag	tgatcagagg	aattagatat	120
gtcttgaaca	ccaatattaa	tttgaggaaa	atacaccaaa	atacattaag	taaattattt	180
aagatcatag	agcttgtaag	tgaaaagata	aaatttgacc	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaaaata	aattactatg	gacttcttgc	tttaattttg	tgatgaatat	300
ggggtgtcac	tggtaaacca	acacattctg	aaggatacat	tacttagtga	tagattctta	360
tgtacttttg	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	gaggaagaaa	agaaaaggat	tacgcatact	gttctttcta	tggaaggatt	480
agatatgttt	cctttgccaa	tattaaaaaa	ataataatgt	ttactactag	tgaaaccc	538

<210> 106
 <211> 473
 <212> DNA
 <213> Homo sapien

<400> 106

tttttttttt	tttttttagtc	aagttttctat	ttttattata	attaaagtct	tggtcatttc	60
attttattagc	tctgcaactt	acatatattta	attaaagaaa	cgttttagac	aactgtacaa	120
tttataaatg	taagggtgcca	ttattgagta	atatattcct	ccaagagtgg	atgtgtccct	180
tctcccacca	actaatgaac	agcaacatta	gtttaatttt	attagtagat	atacactgct	240
gcaaacgcta	attctcttct	ccatcccat	gtgatattgt	gtatatgtgt	gagttggtag	300
aatgcatcac	aatctacaat	caacagcaag	atgaagctag	gctgggcttt	cggtgaaaat	360
agactgtgtc	tgtctgaatc	aaatgatctg	acctatcctc	ggtggcaaga	actcttcgaa	420
ccgcttctct	aaaggcgctg	ccacatttgt	ggtctcttgc	acttgtttca	aaa	473

<210> 107

<211> 1621

<212> DNA

<213> Homo sapien

<400> 107

cgccatggca	ctgcagggca	tctcggtcat	ggagctgtcc	ggcctggccc	cggggccggt	60
ctgtgctatg	gtcctggctg	acttcggggc	gcgtgtggta	cgcgtggacc	ggcccggctc	120
ccgtacagac	gtgagccgct	tgggcccggg	caagcgctcg	ctagtgtctg	acctgaagca	180
gccgcgggga	gccgcggtgc	tgcggcgctc	gtgcaagcgg	tcggatgtgc	tgctggagcc	240
cttccgccgc	gggtgtcatg	agaaactcca	gctgggccc	gagattctgc	agcgggaaaa	300
tccaaggctt	atztatgcca	ggctgagtg	atttggccag	tcaggaagct	tctgccggtt	360
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1621

<210> 108

<211> 382

<212> PRT

<213> Homo sapien

<400> 108

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			20					25				30			
Arg	Val	Asp	Arg	Pro	Gly	Ser	Arg	Tyr	Asp	Val	Ser	Arg	Leu	Gly	Arg
			35				40					45			
Gly	Lys	Arg	Ser	Leu	Val	Leu	Asp	Leu	Lys	Gln	Pro	Arg	Gly	Ala	Ala
	50					55				60					
Val	Leu	Arg	Arg	Leu	Cys	Lys	Arg	Ser	Asp	Val	Leu	Leu	Glu	Pro	Phe
65					70					75				80	

Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
 85 90 95
 Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
 100 105 110
 Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
 115 120 125
 Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
 130 135 140
 Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
 145 150 155 160
 Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
 165 170 175
 Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
 180 185 190
 Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Glu Ala Pro Arg
 195 200 205
 Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
 210 215 220
 Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
 225 230 235 240
 Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
 245 250 255
 Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
 260 265 270
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 275 280 285
 Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
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 His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
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 Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala
 325 330 335
 Ile Pro Ser Phe Lys Arg Asp Pro Phe Ile Gly Glu His Thr Glu Glu
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<210> 109
 <211> 1524
 <212> DNA
 <213> Homo sapien

<400> 109
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<210> 110
 <211> 3410
 <212> DNA
 <213> Homo sapien

<400> 110						
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<210> 111
<211> 1289
<212> DNA
<213> Homo sapien

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<400> 111
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tgttacaatg  ttaaaaaaaa  aaaaaaaaaa  1289

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<210> 112
<211> 315
<212> PRT
<213> Homo sapien

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<400> 112
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Leu Gly Pro Lys Ile Val Ile Val Ser Lys Met Met Lys Asp Val Phe
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Phe Phe Leu Phe Phe Leu Gly Val Trp Leu Val Ala Tyr Gly Val Ala
35     40     45
Thr Glu Gly Leu Leu Arg Pro Arg Asp Ser Asp Phe Pro Ser Ile Leu
50     55     60
Arg Arg Val Phe Tyr Arg Pro Tyr Leu Gln Ile Phe Gly Gln Ile Pro
65     70     75     80
Gln Glu Asp Met Asp Val Ala Leu Met Glu His Ser Asn Cys Ser Ser
85     90     95
Glu Pro Gly Phe Trp Ala His Pro Pro Gly Ala Gln Ala Gly Thr Cys
100    105    110
Val Ser Gln Tyr Ala Asn Trp Leu Val Val Leu Leu Leu Val Ile Phe

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115	120	125
Leu Leu Val Ala Asn Ile	Leu Leu Val Asn Leu	Leu Ile Ala Met Phe
130	135	140
Ser Tyr Thr Phe Gly Lys	Val Gln Gly Asn Ser	Asp Leu Tyr Trp Lys
145	150	155
Ala Gln Arg Tyr Arg	Leu Ile Arg Glu Phe	His Ser Arg Pro Ala Leu
165	170	175
Ala Pro Pro Phe Ile Val	Ile Ser His Leu Arg	Leu Leu Leu Arg Gln
180	185	190
Leu Cys Arg Arg Pro Arg	Ser Pro Gln Pro Ser	Ser Pro Ala Leu Glu
195	200	205
His Phe Arg Val Tyr Leu	Ser Lys Glu Ala Glu	Arg Lys Leu Leu Thr
210	215	220
Trp Glu Ser Val His Lys	Glu Asn Phe Leu Leu	Ala Arg Ala Arg Asp
225	230	235
Lys Arg Glu Ser Asp	Ser Glu Arg Leu Lys	Arg Thr Ser Gln Lys Val
245	250	255
Asp Leu Ala Leu Lys Gln	Leu Gly His Ile Arg	Glu Tyr Glu Gln Arg
260	265	270
Leu Lys Val Leu Glu Arg	Glu Val Gln Gln Cys	Ser Arg Val Leu Gly
275	280	285
Trp Val Ala Glu Ala Leu	Ser Arg Ser Ala Leu	Leu Pro Pro Gly Gly
290	295	300
Pro Pro Pro Pro Asp	Leu Pro Gly Ser Lys	Asp
305	310	315

<210> 113
 <211> 553
 <212> PRT
 <213> Homo sapien

<400> 113
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Ala Ala Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val
35 40 45
Glu Glu Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly
50 55 60
Leu Val Cys Val Pro Leu Gly Ser Ala Ser Asp His Trp Arg Gly
65 70 75 80
Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile
85 90 95
Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu
100 105 110
Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly
115 120 125
Val Gly Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu
130 135 140
Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala
145 150 155 160
Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr
165 170 175
Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu
180 185 190
Gly Thr Gln Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu
195 200 205
Thr Cys Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly
210 215 220
Pro Thr Glu Pro Ala Glu Gly Leu S r Ala Pro Ser Leu Ser Pro His
225 230 235 240

40

Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu
 245 250 255
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 275 280 285
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 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
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 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
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 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Ala Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys

115	120	125
Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met		
130	135	140
Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp		
145	150	155
Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn		160
	165	170
Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala		175
	180	185
His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile		190
	195	200
Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly		205
	210	215
Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu		220
225	230	235
Gln		240

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115	
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catttcactg tgaagtatat tgtgttgcaa aaaaaaaaaa gtgtctttgt ttaaaattac	120
ttggtttgtg aatccatctt gctttttccc cattggaact agtcattaac ccatctctga	180
actggtagaa aaacatctga agagctagtc tatcagcatc tgacaggtga attggatggt	240
tctcagaacc atttcaccca gacagcctgt ttctatcctg tttataaat tagtttgggt	300
tctctacatg cataacaaac cctgctccaa tctgtcacat aaaagtctgt gacttgaagt	360
ttagtc	366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>	
<221> misc_feature	
<222> (1)...(282)	
<223> n = A,T,C or G	
<400> 116	
acaaagatga accatttcct atattatagc aaaatttaaaa tctacccgta ttctaattatt	60
gagaaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa	120
agactttact attttcatat tttaagacac atgattttatc ctatttttagt aacctgggtc	180
atacggttaaa caaaggataa tgtgaacagc agagaggatt tgttggcaga aaatctatgt	240
tcaatctnga actatctana tcacagacat ttctattcct tt	282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>	
<221> misc_feature	
<222> (1)...(305)	
<223> n = A,T,C or G	
<400> 117	
acacatgtcg cttcactgcc ttcttagatg cttctgggtca acatanagga acagggacca	60
tattttatcct cctccttgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa	120

aataaggcaa aatatatgaa acaacaggtc tcgagatatt ggaaatcagt caatgaagga	180
tactgatccc tgatcactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt	240
gactgccccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat	300
tggt	305

<210> 118
 <211> 71
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(71)
 <223> n = A,T,C or G

<400> 118	
accaaggtgt ntgaatctct gacgtgggga tctctgattc ccgcacaatc tgagtggaaa	60
aantcctggg t	71

<210> 119
 <211> 212
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(212)
 <223> n = A,T,C or G

<400> 119	
actccggttg gtgtcagcag cacgtggcat tgaacatngc aatgtggagc ccaaaccaca	60
gaaaatgggg tgaaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac	120
agtaagctgg cccttctaataaaaagaaaat tgaaagggtt ctcactaanc ggaattaant	180
aatggantca aganactccc aggcctcagc gt	212

<210> 120
 <211> 90
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(90)
 <223> n = A,T,C or G

<400> 120	
actcggttgca natcaggggc cccccagagt caccggttgca ggagtccttc tggctcttgcc	60
ctccgccggc gcagaacatg ctgggggtggt	90

<210> 121
 <211> 218
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(218)
 <223> n = A,T,C or G

<400> 121	
tgtancgtga anacgacaga naggggtgtc aaaaatggag aanccttgaa gtcattttga	60
gaataagatt tgctaaaaga tttgggggcta aaacatgggtt attgggagac atttctgaag	120

atatncangt aaattangga atgaattcat ggttcttttg ggaattcctt tacgatngcc 180
agcatanact tcatgtgggg atancagcta cccttgta 218

<210> 122
<211> 171
<212> DNA
<213> Homo sapien

<400> 122
taggggtgta tgcaactgta aggacaaaaa ttgagactca actggcttaa ccaataaagg 60
catttgtag ctcattggaac aggaagtcgg atggtggggc atcttcagtg ctgcatgagt 120
caccaccccg gcgggggtcat ctgtgccaca ggtccctgtt gacagtgcgg t 171

<210> 123
<211> 76
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(76)
<223> n = A,T,C or G

<400> 123
tgtagcgtga agacnacaga atggtgtgtg ctgtgctatc caggaacaca tttattatca 60
ttatcaanta ttgtgt 76

<210> 124
<211> 131
<212> DNA
<213> Homo sapien

<400> 124
acctttcccc aaggccaatg tcctgtgtgc taactggccg gctgcaggac agctgcaatt 60
caatgtgctg ggtcatatgg aggggaggag actctaaaaat agccaatttt attctcttgg 120
ttaagatttg t 131

<210> 125
<211> 432
<212> DNA
<213> Homo sapien

<400> 125
actttatcta ctggctatga aatagatggt ggaaaattgc gttaccaact ataccactgg 60
cttgaaaaag aggtgatagc tcttcagagg acttgtgact ttgctcaga tgctgaagaa 120
ctacagtctg catttggcag aaatgaagat gaatttgat taaatgagga tgctgaagat 180
ttgcctcacc aaacaaaagt gaaacaactg agagaaaatt ttcaggaaaa aagacagtgg 240
ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatcc 300
catggtgggg gtcttgcata tgtaagaatg gaattgattt tgcttttgca agaattctcag 360
caggaaacat cagaaccact attttctagc cctctgtcag agcaaaccctc agtgcctctc 420
ctctttgctt gt 432

<210> 126
<211> 112
<212> DNA
<213> Homo sapien

<400> 126
acacaacttg aatagtaaaa tagaaaactga gctgaaattt ctaattcact ttctaaccat 60
agtaagaatg atatttcccc ccagggatca ccaaatttt ataaaaattt gt 112

<210> 127

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<211> 54
<212> DNA
<213> Homo sapien

<400> 127
accacgaaac cacaacaag atggaagcat caatccactt gccaaagcaca gcag      54

<210> 128
<211> 323
<212> DNA
<213> Homo sapien

<400> 128
acctcattag taattgtttt gttgtttcat ttttttctaa tgtctcccct ctaccagctc      60
acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgctca      120
ttctctctga agtctaggtt acccattttg gggacccatt ataggcaata aacacagttc      180
ccaaagcatt tggacagttt cttgtttgtg tttagaatgg ttttcctttt tcttagcctt      240
ttcctgcaaa aggtcactc agtcccttgc ttgctcagtg gactgggctc cccagggcct      300
aggctgcctt cttttccatg tcc                                          323

<210> 129
<211> 192
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(192)
<223> n = A,T,C or G

<400> 129
acatacatgt gtgtatatatt ttaaatatca cttttgtatc actctgactt tttagcatatc      60
tgaaaacaca ctaacataat ttntgtgaac catgatcaga tacaacccaa atcattcatc      120
tagcacattc atctgtgata naaagatagg tgagtttcat ttccttcacg ttggccaatg      180
gataaacaaa gt                                          192

<210> 130
<211> 362
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(362)
<223> n = A,T,C or G

<400> 130
ccctttttta tggaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca      60
tataatgacg caacaaaaag gtgctgttta gtcctatggg tcagtttatg cccctgacaa      120
gtttccattg tgttttgccg atcttctggc taatcgtggg atcctccatg ttattagtaa      180
ttctgtattc cattttgtta acgcctggta gatgtaacct gctangaggc taactttata      240
cttattttaa agtctttatt ttgtggatc taaaatggca atttatgtgc agcactttat      300
tgcagcagga agcacgtgtg gggttggttg aaagctcttt gctaattcta aaaagtaatg      360
gg                                          362

<210> 131
<211> 332
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

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<222> (1)...(332)

<223> n = A,T,C or G

<400> 131

ctttttgaaa gatcgtgtcc actcctgtgg acatcttgtt ttaatggagt ttcccatgca	60
gtangactgg tatggttgca gctgtccaga taaaaacatt tgaagagctc caaaatgaga	120
gttctcccag gttcgccctg ctgctccaag tctcagcagc agcctctttt aggaggcatc	180
ttctgaacta gattaaggca gcttgtaa atctgatgtgat ttgggtttatt atccaactaa	240
cttccatctg ttatcactgg agaaagccca gactcccan gacnggtacg gattgtgggc	300
atanaaggat tgggtgaagc tggcgttgtg gt	332

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(322)

<223> n = A,T,C or G

<400> 132

acttttgcca ttttgtatat ataaacaatc ttgggacatt ctctgaaaa ctaggtgtcc	60
agtggctaag agaactcgat ttcaagcaat tctgaaagga aaaccagcat gacacagaat	120
ctcaaattcc caaacagggg ctctgtggga aaaatgaggg aggaccttg tatctcgggt	180
tttagcaagt taaatgaan atgacaggaa aggcttattt atcaacaaag agaagagttg	240
ggatgcttct aaaaaaact ttggtagaga aaataggaat gctnaatcct aggggaagcct	300
gtaacaatct acaattggtc ca	322

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(278)

<223> n = A,T,C or G

<400> 133

acaagccttc acaagttaa ctaaattggg attaatcttt ctgtanttat ctgcataatt	60
cttggttttc tttccatctg gctcctgggt tgacaatttg tggaaacaac tctattgcta	120
ctatttaaaa aaaatcaca atctttccct ttaagctatg ttnaattcaa actattcctg	180
ctattcctgt tttgtcaaag aaattatatt tttcaaaata tgtntatttg tttgatgggt	240
cccacgaaac actaataaaa accacagaga ccagcctg	278

<210> 134

<211> 121

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(121)

<223> n = A,T,C or G

<400> 134

gtttanaaaa cttgttttagc tccatagagg aaagaatggt aaactttgta ttttaaaaca	60
tgattctctg aggttaaact tggttttcaa atgttatatt tacttgtatt ttgcttttgg	120
t	121

<210> 135

<211> 350
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(350)
 <223> n = A,T,C or G

<400> 135
 acttanaacc atgcctagca catcagaatc cctcaaagaa catcagtata atcctataacc 60
 atancaagtg gtgactgggt aagcgtgcga caaagggtcag ctggcacatt acttgtgtgc 120
 aaacttgata cttttgttct aagtaggaac tagtatacag tncctaggan tgggtactcca 180
 ggggtgcccc caactcctgc agccgctcct ctgtgccagn ccctgnaagg aactttcgct 240
 ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgctgag 300
 ttcccaagga tgcaaagcct ggtgctcaac tcttggggcg tcaactcagt 350

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggccga ggccagggtt 60
 gctgtgattg tatccgaata ntctcgtga gaaaagataa tgagatgacg tgagcagcct 120
 gcagacttgt gtctgccttc aanaagccag acaggaaggc cctgcctgcc ttggctctga 180
 cctggcggcc agccagccag ccacaggtgg gcttcttctt tttgtggtga caacnccaag 240
 aaaactgcag agggccaggg tcaggtgtna gtgggtangt gaccataaaa caccaggtgc 300
 tcccaggaac ccgggcaaag gccatcccca cctacagcca gcatgcccac tggcgtgatg 360
 ggtgcagang gatgaagcag ccagntgttc tgctgtggt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tngggggtga tgctggtggt anaagttgan gtgacttcan gatggtgtgt 60
 ggaggaagtg tgtgaacgta gggatgtaga ngttttggcc gtgctaaatg agcttcggga 120
 ttggctgggtc ccactggtgg tcactgtcat tggtgggggt cctgt 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138

actcactgga	atgccacatt	cacaacagaa	tcagaggtct	gtgaaaacat	taatggctcc	60
ttaacttctc	cagtaagaat	cagggacttg	aaatggaaac	gttaacagcc	acatgcccac	120
tgctgggcag	tctcccatgc	cttccacagt	gaaagggtct	gagaaaaatc	acatccaatg	180
tcattgtgtt	ccagccacac	caaaagggtg	ttgggggtgga	gggctggggg	catananggt	240
cangcctcag	gaagcctcaa	gttccattca	gctttgccac	tgtacattcc	ccatntttta	300
aaaaactgat	gccttttttt	tttttttttg	taaaattc			338

<210> 139
 <211> 382
 <212> DNA
 <213> Homo sapien

gggaattctt	gtttttggca	tctgggttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tcgagtaaga	aggtgattta	cagccagcct	agtgcccgaa	gtgaaggaga	120
attcaaacag	acctcgtcat	tcttggtgtg	agcctggtcg	gtcaccgcc	tatcatctgc	180
atttgcccta	ctcaggtgct	accggactct	ggcccctgat	gtctgtagtt	tcacaggatg	240
ccttatttgt	cttctacacc	ccacagggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgccccatcc	tccttcacgc	cctccctccc	tttctacca	ctgctgagtg	360
gcctggaact	tgtttaaagt	gt				382

<210> 140
 <211> 200
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(200)
 <223> n = A,T,C or G

accaaanctt	ctttctgttg	tggtngattt	tactataggg	gtttngcttn	ttctaaanat	60
acttttcatt	taacancttt	tgtaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaaat	cacatatttt	180
atattcagca	taaaggagaa					200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(335)
 <223> n = A,T,C or G

actttatttt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggtgg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaaccctaa	ctaattttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaaccatcc	aattcacctg	tcagatgctg	atanactagc	tcttcagatg	240
ttttctacc	agttcagaga	tnggttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attcacaaac	caagtaattt	taaacaaaga	cactt			335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(459)

<223> n = A,T,C or G

<400> 142

accagggttaa	tattgccaca	tatatccttt	ccaattgcgg	gctaaacaga	cgtgtattta	60
gggttggtta	aagacaaccc	agcttaatat	caagagaaat	tgtgaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tcttatttta	ttcagatagc	agtctgatca	180
cacatgggtcc	aacaacactc	aaataataaa	tcaaataatna	tcagatgtta	aagattgggc	240
ttcaaacatc	atagccaatg	atgccccgct	tgectataat	ctctccgaca	taaaaccaca	300
tcaacacctc	agtggccacc	aaaccattca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	ttttcangct	ctgaatagct	ctagggatct	420
cagcanggggt	gggaggaacc	agctcaacct	tggcgtant			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gagttcttat	cacctgaggg	60
aatccaaac	agtctctcct	agaaaggaat	agtgtcacca	acccacacca	tctccctgag	120
accatccgac	ttccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(164)

<223> n = A,T,C or G

<400> 144

acttcagtaa	caacatacaa	taacaacatt	aagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaaaacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattaa	tccatatttg	ttttcaataa	ggaaaaaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(303)

<223> n = A,T,C or G

<400> 145

acgtagacca	tccaactttg	tattttgtaat	ggcaaacatc	cagnagcaat	tcctaaacaa	60
actggagggt	atttataccc	aattatccca	ttcattaaca	tgccctcctc	ctcaggctat	120
gcaggacagc	tatcataagt	cggcccaggc	atccagatac	taccatttgt	ataaacttca	180
gtagggggagt	ccatccaagt	gacagggtcta	atcaaaggag	gaaatggaac	ataagcccgag	240
tagtaaaatn	ttgcttagct	gaaacagcca	caaaagactt	accgccgtgg	tgattaccat	300
caa						303

<210> 146

<211> 327

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac ttcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgctctgggt gggtgagaga gctcctttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcctttc cacattctag caacaatatg ctggccactt 180
 cctgaacagg gaggggtggga ggagccagca tggaacaagc tgccactttc taaagtagcc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttagataa agcattgana gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148
 <211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 acaaccactt tatctcatcg aatttttaac ccaaactcac tcaactgtgcc tttctatcct 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacattc ccttcctgtc ctgaccctga agccattggg 180
 gtggtcctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240
 nccancccac ctacccgacc ccacccctctt acacagctac ctccctgtgc tctaaccocca 300
 tagattatnt ccaaattcag tcaattaagt tactattaac actctaccgg acatgtccag 360
 caccactggg aagccttctc cagccaacac acacacacac acacncacac acacacatat 420
 ccaggcacag gctacctcat cttcacaatc accccttttaa ttaccatgct atggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggaagaac 60
 taacgtatth tagagagcca aggaagggtt ctgtgggggag tgggatgtaa ggtggggcct 120
 gatgataaat aagagtcagc caggtaagtg ggtggtgtgg tatgggcaca gtgaagaaca 180
 tttcaggcag agggaacagc agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

50

<220>
 <221> misc_feature
 <222> (1)...(111)
 <223> n = A,T,C or G

<400> 150
 accttgattt cattgctgct ctgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaattg tggtcagtgt ttggacttgt taactantgg catctttggg t 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcgcggcag gtcattattga acattccaga tacctatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaaaaccat 120
 ggataccaac cggaaaaccc ctatcccgca cagcccaactg tggccccac tgtctacgag 180
 gtgcatccgg ctcatg 196

<210> 152
 <211> 132
 <212> DNA
 <213> Homo sapien

<400> 152
 acagcacttt cacatgtaag aaggggagaaa ttccctaaatg taggagaaag ataacagAAC 60
 cttcccccttt tcatctagtgt gtggaaacct gatgctttat gttgacagga atagaaccag 120
 gagggagttt gt 132

<210> 153
 <211> 285
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(285)
 <223> n = A,T,C or G

<400> 153
 acaanaccca nganaggcca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag 60
 cttctgctct tatgtcctca tctgacaact ctttaccatt tttatcctcg ctgagcagga 120
 gcacatcaat aaagtccaaa gtcttggaact tggccttgge ttggaggaag tcatcaacac 180
 cctggctagt gaggggtgcgg cgccgctcct ggatgacggc atctgtgaag tctgtcacca 240
 gtctgcaggc cctgtggaag cgccgtccac acggagtnag gaatt. 285

<210> 154
 <211> 333
 <212> DNA
 <213> Homo sapien

<400> 154
 accacagtcc tgttgggcca gggcttcagt accctttctg tgaaaagcca tattatcacc 60
 accccaaatt tttccttaaa tatctttaac tgaaggggtc agcctcttga ctgcaaagac 120
 cctaagccgg ttacacagct aactcccact ggccctgatt tgtgaaattg ctgctgcctg 180
 attggcacag gagtccaagg tggtcagctc ccctcctcgg tggaaacgaga ctctgatttg 240
 agtttcacaa attctcgggc cacctcgtca ttgtcctctt gaaataaaat ccggagaaatg 300
 gtcaggcctg tctcatccat atggatcttc cgg 333

<210> 155

<211> 308
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(308)
 <223> n = A,T,C or G

<400> 155
 actggaaata ataaaaccca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg 60
 gaaagtgtt tgggaactgt aaagtgccta acacatgac gatgattttt gttataatat 120
 ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc 180
 atcacagctc actgctctgt tcatccaggc ccagcatgta gtggctgatt cttcttggct 240
 gcttttagcc tccanaagtt tctctgaagc caaccaaacc tctangtga aggcattgctg 300
 gccttggt 308

<210> 156
 <211> 295
 <212> DNA
 <213> Homo sapien

<400> 156
 accttgctcg gtgcttgga catattagga actcaaaata tgagatgata acagtgccta 60
 ttattgatta ctgagagAAC tgttagacat ttagttgaag attttctaca caggaactga 120
 gaataggaga ttatgtttgg cctcatatt ctctcctatc ctcttgcct cattctatgt 180
 ctaatatatt ctcaatcaaa taaggttagc ataatcagga aatcgaccaa ataccaatat 240
 aaaaccagat gtctatcctt aagattttca aatagaaaac aaattaacag actat 295

<210> 157
 <211> 126
 <212> DNA
 <213> Homo sapien

<400> 157
 acaagtttaa atagtgtgt cactgtgcat gtgctgaaat gtgaaatcca ccacatttct 60
 gaagagcaaa acaattctg tcatgtaatc tctatcttgg gtcgtgggta tatctgtccc 120
 cttagt 126

<210> 158
 <211> 442
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(442)
 <223> n = A,T,C or G

<400> 158
 acccactggt cttggaaaca cccatcotta atacgatgat ttttctgtcg tgtgaaaatg 60
 aanccagcag gctgccccta gtcagtccct ccttccagag aaaaagagat ttgagaaagt 120
 gcctgggtaa ttcaccatta atttccctcc ccaaactctc tgagtcttcc cttaatat 180
 ctggtggttc tgaccaaagc aggtcatggt ttgttgagca tttgggatcc cagtgaagta 240
 natgtttgta gccttgcata cttagccctt cccacgcaca aacggagtgg cagagtgggtg 300
 ccaaccctgt tttcccgatc cacgtagaca gattcacagt gcggaattct ggaagctgga 360
 nacagacggg ctctttgcag agccgggact ctgagangga catgagggcc tctgcctctg 420
 tgttcattct ctgatgtcct gt 442

<210> 159
 <211> 498
 <212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(498)

<223> n = A,T,C or G

<400> 159

acttccaggt	aacgttggtg	tttccgttga	gcctgaactg	atgggtgacg	ttgtagggtc	60
tccaacaaga	actgaggttg	cagagcgggt	aggggaagag	gctgttccag	ttgcacctgg	120
gctgctgtgg	actggttggt	attcctcact	acggcccaag	gttggtgaac	tggcanaaag	180
gtgtgttggt	gganttgagc	tcgggcggct	gtggtaggtt	gtgggctctt	caacaggggc	240
tgctgtggtg	ccgggangtg	aangtggttg	gtcacttgag	cttggccagc	tctggaaagt	300
antanattct	tcctgaaggc	cagcgttgtg	ggagctggca	ngggtcantg	ttgtgtgtaa	360
cgaaccagtg	ctgctgtggg	tgggtgtana	tcctccacaa	agcctgaagt	tatggtgtcn	420
tcaggtaana	atgtggtttc	agtgtccctg	ggcngctgtg	gaaggttgta	nattgtcacc	480
aagggaataa	gctgtggt					498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(380)

<223> n = A,T,C or G

<400> 160

acctgcatcc	agcttccctg	ccaaactcac	aaggagacat	caacctctag	acagggaaac	60
agcttcagga	tacttccagg	agacagagcc	accagcagca	aaacaaatat	tcccatgcct	120
ggagcatggc	atagaggaag	ctganaaatg	tggggtctga	ggaagccatt	tgagtctggc	180
cactagacat	ctcatcagcc	acttgtgtga	agagatgccc	catgacccca	gatgcctctc	240
ccacccttac	ctccatctca	cacacttgag	ctttccactc	tgtataattc	taacatcctg	300
gagaaaaatg	gcagtttgac	cgaacctgtt	cacaacggta	gaggctgatt	tctaacgaaa	360
cttgtagaat	gaagcctgga					380

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

actccacatc	ccctctgagc	aggcgtttgt	cggtcaaggt	gtatttggcc	ttgcctgtca	60
cactgtccac	tggcccctta	tccacttggt	gcttaatccc	tcgaaagagc	atgt	114

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

actttctgaa	tcgaatcaaa	tgatacttag	tgtagtttta	atatacctcat	atatatcaaa	60
gttttactac	tctgataatt	ttgtaaacca	ggtaaccaga	acatccagtc	atacagcttt	120
tggtgatata	taacttggca	ataaccagct	ctggtgatac	ataaaaactac	tcactgt	177

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(137)
 <223> n = A,T,C or G

<400> 163

catttatata	gacaggcgtg	aagacattca	cgacaaaaac	gcgaaattct	atccccgtgac	60
canagaaggc	agctacggct	actcctacat	cctggcgtgg	gtggccttcg	cctgcacctt	120
catcagcggc	atgatgt					137

<210> 164
 <211> 469
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(469)
 <223> n = A,T,C or G

<400> 164

cttatcacaa	tgaatgttct	cctgggcagc	gttgtgatct	ttgccacctt	cgtgacttta	60
tgcaatgcat	catgctattt	cataccta	gagggagttc	caggagattc	aaccaggaaa	120
tgcatggatc	tcaaaggaaa	caaacaccca	ataaactcgg	agtggcagac	tgacaactgt	180
gagacatgca	cttgctacga	aacagaaatt	tcatgttgca	cccttgtttc	tacacctgtg	240
ggttatgaca	aagacaactg	caaagaatc	ttcaagaag	aggactgcaa	gtatatcgtg	300
gtggagaaga	aggacccaaa	aaagacctgt	tctgtcagtg	aatggataat	ctaattgtgt	360
tctagtaggc	acagggtccc	caggccaggc	ctcattctcc	tctggcctct	aatagtcaat	420
gattgtgtag	ccatgcctat	cagtaaaaag	atntttgagc	aaacacttt		469

<210> 165
 <211> 195
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(195)
 <223> n = A,T,C or G

<400> 165

acagtttttt	atanatatcg	acattgccgg	cacttgtgtt	cagtttcata	aagctgggtg	60
atccgctgtc	atccactatt	ccttggctag	agtaaaaatt	attcttatag	cccatgtccc	120
tgcaggccgc	ccgcccgtag	ttctcgttcc	agtcgtcttg	gcacacaggg	tgccaggact	180
tcctctgaga	tgagt					195

<210> 166
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A,T,C or G

<400> 166

acatcttagt	agtgtggcac	atcagggggc	catcagggtc	acagtcactc	atagcctcgc	60
cgagggtcgg	gtccacacca	ccggtgtagg	tgtgctcaat	cttgggcttg	gcgcccacct	120
ttggagaagg	gatatgctgc	acacacatgt	ccacaaagcc	tgtgaactcg	ccaaagaatt	180
tttgcagacc	agcctgagca	aggggcggat	gttcagcttc	agctcctcct	tcgtcagggtg	240
gatgccaacc	tcgtctangg	tccgtgggaa	gctgggtgcc	acntcaccta	caacctgggc	300
gangatctta	taaagaggct	ccnagataaa	ctccacgaaa	cttctctggg	agctgctagt	360

nggggccttt ttggtgaact ttc

383

<210> 167
 <211> 247
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(247)
 <223> n = A,T,C or G

<400> 167

acagagccag	accttggcca	taaatgaanc	agagattaag	actaaacccc	aagtcganat	60
tggagcagaa	actggagcaa	gaagtgggcc	tggggctgaa	gtagagacca	aggccactgc	120
tatanccata	cacagagcca	actctcaggc	caaggcnatg	gttggggcag	anccagagac	180
tcaatctgan	tccaaagtgg	tggctggaac	actggtcatg	acanaggcag	tgactctgac	240
tgangtc						247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(273)
 <223> n = A,T,C or G

<400> 168

acttctaagt	tttctagaag	tggaaggatt	gtantcatcc	tgaaaatggg	tttacttcaa	60
aatccctcan	ccttggttctt	cacnactgtc	tatactgana	gtgtcatgtt	tccacaaagg	120
gctgacacct	gagcctgnat	tttactcat	ccctgagaag	ccctttccag	taggggtgggc	180
aattcccaac	ttccttgcca	caagcttccc	aggctttctc	ccctggaaaa	ctccagcttg	240
agtcccagat	acactcatgg	gctgacctgg	gca			273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(431)
 <223> n = A,T,C or G

<400> 169

acagccttgg	cttccccaaa	ctccacagtc	tcagtgcaga	aagatcatct	tccagcagtc	60
agctcagacc	agggtcaaag	gatgtgacat	caacagtttc	tggtttcaga	acaggttcta	120
ctactgtcaa	atgacccccc	atacttcctc	aaaggctgtg	gtaagttttg	cacagggtgag	180
ggcagcagaa	aggggggtant	tactgatgga	caccatcttc	tctgtatact	ccacactgac	240
cttgccatgg	gcaaaggccc	ctaccacaaa	aacaatagga	tcactgctgg	gcaccagctc	300
acgcacatca	ctgacaaccg	ggatggaaaa	agaantgcca	actttcatac	atccaactgg	360
aaagtgatct	gatactggat	tcttaattac	cttcaaaagc	ttctgggggc	catcagctgc	420
tcgaacactg	a					431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

<220>

<221> misc feature
 <222> (1)...(266)
 <223> n = A,T,C or G

<400> 170
 acctgtgggc tgggctgtta tgccgtgtgcc ggctgtctgaa agggagttca gaggtggagc 60
 tcaaggagct ctgcaggcat ttgccaanc ctctccanag canagggagc aacctacact 120
 ccccgtaga aagacaccag attggagtcc tgggagggg agttggggtg ggcatttgat 180
 gtatacttgt cacctgaatg aangagccag agaggaanga gacgaanatg anattggcct 240
 tcaaagctag ggggtctggca ggtgga 266

<210> 171
 <211> 1248
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(1248)
 <223> n = A,T,C or G

<400> 171
 ggcagccaaa tcataaacgg cgaggactgc agccccgact cgcagccctg gcaggcggca 60
 ctggtcatgg aaaacgaatt gttctgctcg ggctgcctgg tgcacccgca gtgggtgctg 120
 tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggctg 180
 cacagtcttg aggccgacca agagccaggg agccagatgg tggaggccag cctctccgta 240
 cggcaccag agtacaacag acccttgctc gctaacgacc tcatgctcat caagtgggac 300
 gaatccgtgt ccgagtctga caccatccgg agcatcagca ttgcttcgca gtgccctacc 360
 gcggggaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc 420
 gtgctgcagt gcgtgaacgt gtcggtggg tctgaggagg tctgcagtaa gctctatgac 480
 ccgctgtacc accccagcat gttctgcgcc ggccggaggc aagaccagaa ggactcctgc 540
 aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggcct tgtgtctttc 600
 ggaaaagccc cgtgtggcca agttggcgtg ccagggtgtct acaccaacct ctgcaaattc 660
 actgagtggga tagagaaaac cgtccaggcc agttaactct ggggactggg aacctatgaa 720
 attgaccccc aaatacatcc tgcggaagga attcaggaat atctgttccc agccccctc 780
 ccctcaggcc caggagtcca ggccccccag ccctcctccc tcaaaccaag ggtacagatc 840
 cccagccctt cctccctcag acccaggagt ccagaccccc cagccctccc tccctcagac 900
 ccaggagtcc agccccctc cctcagacc caggagtcca gacccccag cccctcctcc 960
 ctcagaccca ggggtccagg cccccaaccc ctccctccctc agactcagag gtccaagccc 1020
 ccaaccntc attccccaga cccagaggtc caggtcccg cccctcntcc ctcagaccca 1080
 gcggtccaat gccacctaga ctntccctgt acacagtgcc cccttggtgg acgttgaccc 1140
 aaccttacca gttgtgtttt catttttngt ccctttcccc tagatccaga aataaagttt 1200
 aagagaagng caaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaa 1248

<210> 172
 <211> 159
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(159)
 <223> Xaa = Any Amino Acid

<400> 172
 Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
 1 5 10 15
 Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
 20 25 30
 Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
 35 40 45
 Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

56

50						55						60					
Arg	Met	Pro	Thr	Val	Leu	Gln	Cys	Val	Asn	Val	Ser	Val	Val	Ser	Glu		
65					70					75					80		
Glu	Val	Cys	Ser	Lys	Leu	Tyr	Asp	Pro	Leu	Tyr	His	Pro	Ser	Met	Phe		
				85					90					95			
Cys	Ala	Gly	Gly	Gln	Xaa	Gln	Xaa	Asp	Ser	Cys	Asn	Gly	Asp	Ser			
			100				105						110				
Gly	Gly	Pro	Leu	Ile	Cys	Asn	Gly	Tyr	Leu	Gln	Gly	Leu	Val	Ser	Phe		
		115				120						125					
Gly	Lys	Ala	Pro	Cys	Gly	Gln	Val	Gly	Val	Pro	Gly	Val	Tyr	Thr	Asn		
	130				135						140						
Leu	Cys	Lys	Phe	Thr	Glu	Trp	Ile	Glu	Lys	Thr	Val	Gln	Ala	Ser			
145					150					155							

<210> 173
 <211> 1265
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(1265)
 <223> n = A,T,C or G

<400> 173

ggcagcccg	actgcgagcc	ctggcaggcg	gcactgggtca	tggaaaacga	attgtttctgc	60
tggggcgctc	tggtgcatcc	gcagtgggtg	ctgtcagccg	cacactgttt	ccagaactcc	120
tacaccatcg	ggctgggctt	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaccca	gagtacaaca	gacccttgct	cgctaacgac	240
ctcatgctca	tcaagttgga	cgaatccgtg	tccgagtctg	acaccatccg	gagcatcagc	300
attgcttcgc	agtgccttac	cgcggggaac	tcttgccctg	tttctggctg	gggtctgctg	360
gcgaacggtg	agctcacggg	tgtgtgtctg	ccctcttcaa	ggaggtcctc	tgcccagtcg	420
cgggggctga	cccagagctc	tgcgtcccag	gcagaatgcc	taccgtgctg	cagtgcgtga	480
acgtgtcggg	ggtgtctgag	gaggtctgca	gtaagctcta	tgaccgcgtg	taccacccca	540
gcattgttctg	cgccggcgga	gggcaagacc	agaaggactc	ctgcaacggg	gactctgggg	600
ggccctgat	ctgcaacggg	tacttgacgg	gccttggtgc	tttcggaaaa	gccccgtgtg	660
gccaagttgg	cgtgccaggt	gtctacacca	acctctgcaa	attcactgag	tgatagaga	720
aaaccgtcca	ggccagttaa	ctctggggac	tgggaaccca	tgaaattgac	cccaaatac	780
atcctgcgga	aggaattcag	gaatatctgt	tcccagcccc	tcctccctca	ggcccaggag	840
tccaggcccc	cagccctcc	tccctcaaac	caagggtaca	gatccccagc	ccctccctcc	900
tcagaccag	gagtcacag	ccccagcccc	ctcctccctc	agaccagga	gtccagcccc	960
tcctccntca	gacccaggag	tccagacccc	ccagcccctc	ctccctcaga	cccagggggt	1020
gaggccccc	acccctcctc	cttcagagtc	agaggtccaa	gcccccaacc	cctcggtccc	1080
cagaccaga	ggttnaggtc	ccagcccctc	ttcctcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcccccttg	tggnangttg	acccaacctt	accagttggt	1200
ttttcatttt	tngtcccttt	cccctagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

<210> 174
 <211> 1459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(1459)
 <223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgag	tgcagagctc	ctacaccatc	gggctggggc	60
tgcacagtct	tgaggccgac	caagagccag	ggagccagat	ggtggaggcc	agcctctccg	120
tacggcacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagttgg	180

acgaatccgt	gtccgagtct	gacaccatcc	ggagcatcag	cattgcttcg	cagtgccta	240
ccgcgggaa	ctcttgctc	gtttctggct	ggggtctgct	ggcgaacggt	gagctcacgg	300
gtgtgtgtct	gccctcttca	aggaggtcct	ctgccagtc	gcgggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgcgtg	aacgtgtcgg	tggtgtctga	420
ngaggtctgc	antaagctct	atgacccgct	gtaccacccc	ancatgttct	gcgcggcg	480
agggcaagac	cagaaggact	cctgcaacgt	gagagagggg	aaaggggagg	gcaggcgact	540
cagggaagg	tggagaagg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaactgagag	aaacagagaa	660
ataaacacag	gaataaagag	aagcaaagga	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttga	ccttccaaca	gcatggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tectcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctact	gttgacgggg	agccttacca	ataacataaa	tagtcgattt	atgcatacgt	900
tttatgcatt	catgatatac	ctttgttgga	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tgttgcaact	ctcctaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttgtgcat	tcaaaccagg	gttgttcaag	ggtcaactgt	1080
gtacccagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aatcaagac	tctacaaaga	ggctgggcag	ggtggctcat	gcctgtaatc	ccagcacttt	1200
gggaggcgag	gcaggcagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatcct	gtctgtacta	aaaatacaaa	agttagctgg	atatgggtgc	agggcctgt	1320
aatcccagct	acttgggagg	ctgaggcagg	agaattgctt	gaatatggga	ggcagaggtt	1380
gaagtgagtt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1167)

<223> n = A,T,C or G

<400> 175

gcgcagccct	ggcaggcggc	actgggtcatg	gaaaacgaat	tgttctgctc	gggcgtcctg	60
gtgcatccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggcctgc	acagtcttga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccacaga	gtacaacaga	ctcttgctcg	ctaaccgacct	catgctcatc	240
aagttggacg	aatccgtgtc	cgagtctgac	accatccgga	gcatcagcat	tgttcgcag	300
tgccctaccg	cggggaactc	ttgcctcgtn	tctggctggg	gtctgctggc	gaacggcaga	360
atgcctaccg	tgctgcactg	cgtgaacgtg	tgggtgggtg	ctgaggangt	ctgcagtaag	420
ctctatgacc	cgctgtacca	ccccagcatg	ttctgcgccg	gcggagggca	agaccagaag	480
gactcctgca	acggtgactc	tggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcggtg	cagggtgtcta	caccaacctc	600
tgcaaattca	ctgagtggat	agagaaaacc	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgaccccca	aatacatcct	gcggaangaa	ttcaggaata	tctgttccca	720
gcccctcctc	cctcaggccc	aggagtccag	gccccagacc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagcccctc	ctccctcaga	cccaggagtc	cagaccccc	agcccctcnt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900
cententccg	tcagaccag	gggtgcaggc	ccccaacccc	tentccntca	gagtcagagg	960
tccaagcccc	caaccctcgc	ttccccagac	ccagaggtnc	aggtcccagc	ccctcctccc	1020
tcagaccag	cgggtccaatg	ccacctagan	tntccctgta	cacagtgcgc	ccttgtggca	1080
ngttgacca	accttaccag	ttggtttttc	attttttgct	cctttcccct	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

<210> 176

<211> 205

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(205)

<223> Xaa = Any Amino Acid

<400> 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
      20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
      35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
      50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
      65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
      85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
      100      105      110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
      115      120      125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
      130      135      140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
      145      150      155      160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
      165      170      175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
      180      185      190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
      195      200      205

```

<210> 177

<211> 1119

<212> DNA

<213> Homo sapien

<400> 177

```

gcgcactcgc agccctggca ggcggcactg gtcattggaaa acgaattggt ctgctcgggc      60
gtcctgggtgc atccgcagtg ggtgctgtca gccgcacact gttccagaa ctcctacacc      120
atcgggctgg gcctgcacag tcttgaggcc gaccaagagc caggagcca gatggtggag      180
gccagcctct ccgtacggca cccagagtag aacagaccct tgctcgctaa cgacctcatg      240
ctcatcaagt tggacgaatc cgtgtccgag tctgacacca tccggagcat cagcattgct      300
tcgcagtgcc ctaccgcggg gaactcttgc ctcgtttctg gctggggtct gctggcgaac      360
gatgctgtga ttgccatcca gtcccagact gtgggaggct gggagtgtga gaagctttcc      420
caaccctggc agggttgtac catttcggca acttccagtg caaggacgtc ctgctgcata      480
ctcactgggt gtcactact gtcactgca tcacccgga cactgtgatc aactagccag      540
caccatagtt ctccgaagtc agactatcat gattactgtg ttgactgtgc tgtctattgt      600
actaaccatg ccgatgttta ggtgaaatta gcgtcacttg gcctcaacca tcttggtatc      660
cagttatcct cactgaattg agatttcctg cttcagtgct agccattccc acataatttc      720
tgacctacag aggtgaggga tcatatagct cttcaaggat gctggtactc ccctcaciaa      780
ttcatttctc ctgttgtagt gaaagggtgc cctctggag cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgtat gatcgtgttc ccattaccca aagcctttaa atccctcatg      900
ctcagtacac cagggcaggt ctagcatttc ttcatttagt gtatgctgtc cattcatgca      960
accacctcag gactcctgga ttctctgct agttgagctc ctgcatgctg cctccttggg      1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtaaca cattaggtgc      1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaaaa      1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100      105      110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115      120      125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130      135      140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145      150      155      160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

ctggagtgcc ttggtgtttc aagcccctgc aggaagcaga atgcaccttc tgaggcacct      60
ccagctgccc ccggccgggg gatgcgaggc tcggagcacc cttgcccggc tgtgattgct      120
gccaggcact gttcatctca gcttttctgt ccctttgctc ccggcaagcg cttctgctga      180
aagttcatat ctggagcctg atgtcttaac gaataaaggt cccatgctcc acccgaaaaa      240
aaaaaaaaaa                                     250

```

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

```

actagtcag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca      60
tcaccagac cccgcccctg cccgtgcccc acgtgctgct taacgacagt atgatgctta      120
ctctgctact cggaactat ttttatgtaa ttaatgtatg ctttcttggt tataaatgcc      180
tgatttaaaa aaaaaaaaaa aa                                     202

```

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(558)

<223> n = A,T,C or G

60

```

<400> 181
tccytttgkt naggtttkkg agacamccck agacctwaan ctgtgtcaca gacttcyngg      60
aatgttttagg cagtgcctagt aatttcytcg taatgattct gttattactt tcctnattct      120
ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatacaaaaa      180
ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatccattca      240
aaattatgca agtttagtaat tactcagggt taactaaatt actttaatat gctgttgaac      300
ctactctggt ccttggtctag aaaaaattat aaacaggact ttgttagttt gggaagccaa      360
attgataata ttctatgttc taaaagttgg gctatacata aattattaag aaatatggaw      420
ttttattccc aggaatatgg kgttcatttt atgaatatta cscrggatag awgtwtgagt      480
aaaaycagtt ttggtwaata ygtwaatatg tcmtaaataa acaakgcttt gacttatttc      540
caaaaaaaaa aaaaaaaaaa

```

```

<210> 182
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

```

```

<400> 182
acagggwttk grggatgcta agsccccrga rwtggtttga tccaaccctg gcttwttttc      60
agaggggaaa atggggccta gaagttacag mscatytagy tgggtgcgmg gaccccttg      120
cstcacacag astcccaggt agctgggact acaggcacac agtcactgaa gcaggccctg      180
ttwgcaattc acgttgccac ctccaactta aacattcttc atatgtgatg tccttagtca      240
ctaaggttaa actttccac ccagaaaagg caacttagat aaaatcttag agtactttca      300
tactmttcta agtcctcttc cagcctcact kkgagtccctm cytggggggt gataggaant      360
ntctcttggc tttctcaata aartctctat ycatctcatg ttttaatttg tacgcata      420
awtgstgara aaattaaaat gttctggtty mactttaaaa aaaaaaaaaa aaaaaaaaaa      479

```

```

<210> 183
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 183
aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc      60
agtaccagta ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgct      120
ggtgccagcc tgaccgccac tctcacattt gggctcttcg ctggccttgg tggagctggt      180
gccagcacca gtggcagctc tgggtgcctgt ggtttctcct acaagtgaga ttttagatat      240
tgtaaatcct gccagtcttt ctcttcaagc cagggtgcat cctcagaaac ctactcaaca      300
cagcactcta ggcagccact atcaatcaat tgaagttgac actctgcatt aratctattt      360
gccatttcaa aaaaaaaaaa aaaa

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

```

```

<400> 184
accgaattgg gaccgctggc ttataagcga tcatgtyynt ccrgtatkac ctcaacgagc      60
aggagatcg agtctatacg ctgaagaaat ttgacccgat gggacaacag acctgctcag      120
cccatcctgc tcggttctcc ccagatgaca aatactctsg acaccgaatc accatcaaga      180
aacgcttcaa ggtgctcatg accagcaac cgcgcctgt cctctgaggg tcccttaaac      240
tgatgtcttt tctgccacct gttaccacct ggagactccg taaccaaact cttcggaact      300

```

tgagccctga	tgcctttttg	ccagccatac	tcttttggcat	ccagtctctc	gtggcgattg	360
attatgcttg	tgtgaggcaa	tcatgggtgg	atcacccata	aagggaacac	atttgacttt	420
tttttctcat	attttaaatt	actacmagaw	tattwmagaw	waaatgawtt	gaaaaactst	480
taaaaaaaaa	aaaaaa					496

<210> 185
 <211> 384
 <212> DNA
 <213> Homo sapien

<400> 185						
gctggtagcc	tatggcgkkg	cccacggagg	ggctcctgag	gccacggrac	agtgacttcc	60
caagtatcyt	gcgcsgcgtc	ttctaccgtc	cctacctgca	gatcttcggg	cagattcccc	120
aggaggacat	ggacgtggcc	ctcatggagc	acagcaactg	ytctgcggag	cccggcttct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgcgtctc	ccagtatgcc	aactggcttg	240
tggtgctgct	cctcgtcctc	ttcctgctcg	tggccaacat	cctgctggtc	aacttgctca	300
ttgccatgtt	cagttacaca	ttcggcaaag	tacagggcaa	cagcgatctc	tactgggaag	360
gcgcagcgtt	accgcctcat	cggg				384

<210> 186
 <211> 577
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(577)
 <223> n = A,T,C or G

<400> 186						
gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcataccgc	60
tnccatcgct	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaaacctgt	gggctgggtc	tgtcttcgcg	180
tcggtgtgaa	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgagggtcac	300
cagccctatc	atgccgttga	mcgtgccgaa	garcaccgag	ccttggtgtg	gggkkgaaat	360
ctcaccacga	ttctgcatta	ccagagagcc	gtggcaaaaag	acattgacaa	actcgcccag	420
gtggaaaaaag	amcamctcct	ggargtgctn	gccgctcctc	gtcmgttggt	ggcagcgctw	480
tcctttttgac	acacaaacaa	gttaaaggca	ttttcagccc	ccagaaaantt	gtcatcatcc	540
aagatntcgc	acagcactna	tccagttggg	attaaat			577

<210> 187
 <211> 534
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(534)
 <223> n = A,T,C or G

<400> 187						
aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkggaaaa	gmaacattaa	agcctggaca	ctgggtattaa	aattcacaaat	atgcaaacact	120
ttaaacagtg	tgtcaatctg	ctcccyynac	tttgtcatca	ccagtctggg	aakaagggtta	180
tgccctattc	acacctgtta	aaaggcgct	aagcattttt	gattcaacat	cttttttttt	240
gacacaagtc	cgaaaaaagc	aaaagtaaac	agttatyaat	ttgttagcna	attcactttc	300
ttcatgggac	agagccatyt	gatttaaaaa	gcaaattgca	taatattgag	cttyggggagc	360
tgatatattga	gcgggaagagt	agcctttcta	cttcaccaga	cacaactccc	tttcatattg	420
ggatgttnac	naaagtwatg	tctctwacag	atgggatgct	tttgtggcaa	ttctgttctg	480
aggatctccc	agtttattta	ccacttgcac	aagaaggcgt	tttcttctc	aggc	534

<210> 188
 <211> 761
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(761)
 <223> n = A,T,C or G

<400> 188
 agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaattt tgtgtgcgtg 60
 tgtgtgtgcg cgcataattat atagacaggc acatcttttt tacttttgta aaagcttatg 120
 cctcttttgg atctatatct gtgaaagttt taatgatctg ccataatgtc ttggggacct 180
 ttgtcttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 tttattcgac atgaaggaaa ttccagatn acaacactna caaactctcc ctkgackarg 300
 ggggacaaaag aaaagcaaaa ctgamcataa raaacaatwa cctgggtgaga arttgcataa 360
 acagaaatwr ggtagtatat tgaarnacag catcattaaa rmgttwtktt wttctccctt 420
 gcaaaaaaca tgtacngact tcccgttgag taatgccaaag ttgttttttt tatnataaaa 480
 cttgcccttc attacatggt tnaaagtggg gtgggtggcc aaaatattga aatgatggaa 540
 ctgactgata aagctgtaca aataagcagt gtgcctaaca agcaacacag taatgttgac 600
 atgcttaatt cacaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta 660
 tttttctgtn ttccagagc tgagatntta gattttatgt agtatnaagt gaaaaantac 720
 gaaaataata acattgaaga aaaananaaa aaanaaaaaa a 761

<210> 189
 <211> 482
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(482)
 <223> n = A,T,C or G

<400> 189
 tttttttttt ttggccgatn ctactatttt attgcaggan gtgggggtgt atgcaccgca 60
 caccggggct atnagaagca agaaggaagg agggagggca cagccccttg ctgagcaaca 120
 aagccgcctg ctgccttctc tgtctgtctc ctggtgcagg cacatgggga gaccttcccc 180
 aaggcagggg ccaccagtcg aggggtggga atacaggggg tgggangtgt gcataagaag 240
 tgataggcac agggcaccgg gtacagaccc ctggtctcct gacaggtnga ttctgaccag 300
 gtcattgtgc cctgcccagg cacagcgtn atctggaaaa gacagaatgc ttctcttttc 360
 aaatttggt ngtcatngaa ngggcanttt tccaanttng gctnggtctt ggtacncttg 420
 gttcggccca gctcncgct caaaaantat tcaccnctt ccnaattgct tgcnggnccc 480
 cc 482

<210> 190
 <211> 471
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(471)
 <223> n = A,T,C or G

<400> 190
 tttttttttt ttttaaaaca gtttttcaca acaaaattta ttagaagaat agtggttttg 60
 aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtntctca 120
 aatgtctggc caaatgatac aatgggaacca ttcaatctta cacatgcacg aaagaacaag 180
 cgcttttgac atacaatgca caaaaaaaaa aggggggggg gaccacatgg attaaaaattt 240
 taagtactca tcacatacat taagacacag ttctagtcca gtcnaaaatc agaactgcnt 300

tgaaaaattt	catgtatgca	atccaaccaa	agaacttnat	tggtgatcat	gantncteta	360
ctacatcnac	cttgatcatt	gccaggaacn	aaaagttnaa	ancacncngt	acaaaaanaa	420
tctgtaattn	anttcaacct	ccgtacngaa	aaatnttnnt	tatacactcc	c	471

<210> 191

<211> 402

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(402)

<223> n = A,T,C or G

<400> 191

gagggattga	aggtctgttc	tastgtcggm	ctgttcagcc	accaaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	accagacwg	tatcttcata	aatagaacaa	120
attcttcacc	agtcacatct	tctaggacct	ttttggattc	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaag	tcttaagttt	tgtagaaagg	aattyaattg	240
ctcgttctct	aacaatgtcc	tctccttgaa	gtatttggct	gaacaaccca	cctaaagtcc	300
ctttgtgcat	ccatttttaa	tatacttaat	agggcattgk	tnactaggt	taaattctgc	360
aagagtcate	tgtctgcaaa	agttgcgtta	gtatatctgc	ca		402

<210> 192

<211> 601

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(601)

<223> n = A,T,C or G

<400> 192

gagctcggat	ccaataatct	ttgtctgagg	gcagcacaca	tatncagtgc	catgгнаact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcytyttt	gaytaccgtg	tgccaagtgc	tggtgattct	yaacacacyt	ccatcccgyt	180
cttttggtga	aaaactggca	cttkctctga	actagcarga	catcacttac	aaattcaccc	240
acgagacact	tgaaagggtg	aacaaagcga	ytcttgcat	gctttttgtc	cctccggcac	300
cagttgtcaa	tactaaccgg	ctggtttgcc	tccatcacat	ttgtgatctg	tagctctgga	360
tacatctcct	gacagtactg	aagaacttct	tcttttggtt	caaaagcarg	tcttggtgcc	420
tgttggatca	ggttcccat	tcccagtcyg	aatgttcaca	tggcatattt	wacttccac	480
aaaacattgc	gatttgaggc	tcagcaacag	caaactctgt	tccggcattg	gctgcaagag	540
cctcgatgta	gccggccagc	gccaaggcag	gcgccgtgag	ccccaccagc	agcagaagca	600
g						601

<210> 193

<211> 608

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(608)

<223> n = A,T,C or G

<400> 193

atacagccca	natcccacca	cgaagatgcg	cttggtgact	gagaacctga	tgccggtcact	60
ggtcccgtg	tagccccagc	gactctccac	ctgctggaag	cggttgatgc	tgactctytt	120
cccaacgcag	gcagmagcgg	gscgggtcaa	tgaactccay	tcgtggcttg	gggtkgacgg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggtccaccag	gatgcccagc	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggccccag	ggccttgccc	300

```

agaaccttcc gectgttctc tggcgtcacc tgcagctgct gccgctgaca ctcggcctcg      360
gaccagcgga caaacggcrt tgaacagccg cacctcacgg atgcccagtg tgtcgcgctc      420
caggammgsc accagcgtgt ccaggtcaat gtcggtgaag ccctccgcgg gtrattggcgt      480
ctgcagtggt tttgtcgatg ttctccaggc acaggctggc cagctgcggg tcatcgaaga      540
gtcgcgcctg cgtgagcagc atgaaggcgt tgcggtctcg cagttcttct tcaggaactc      600
cacgcaat                                         608

```

```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

```

```

<400> 194
gaacggctgg accttgccctc gcattgtgct tgctggcagg gaataccttg gcaagcagyt      60
ccagtcaggag cagccccaga ccgctgccgc ccgaagctaa gcctgcctct ggccttcccc      120
tccgcctcaa tgcagaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta cttgggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagtaggtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtatttatt gktnctstgg      360
aaataaatat agttattaaa ggttgtcant cc                                         392

```

```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

```

```

<400> 195
ccsttkgagg ggtkaggkyc cagttyccga gtggaagaaa caggccagga gaagtgcgtg      60
ccgagctgag gcagatgttc ccacagtgc cccagagacc stgggstata gtytctgacc      120
cctcncaagg aaagaccacs ttctggggac atgggctgga gggcaggacc tagaggcacc      180
aagggaaggc cccattccgg ggstgttccc cgaggaggaa ggggaagggc tctgtgtgcc      240
ccccasgagg aagaggccct gagtccctgg atcagacacc ccttcacgtg tatccccaca      300
caaatgcaag ctaccaagg tccccctcga gtccccctcc stacaccctg amcggccact      360
gscscacacc caccagagc acgccaccgc ccatggggar tgtgctcaag gartcgcnng      420
gcarcgtgga catctngtcc cagaagggg cagaatctcc aatagangga ctgarcmstt      480
gctnanaaaa aaaaaaaaaa aa                                         502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(665)
<223> n = A,T,C or G

```

```

<400> 196
ggttacttgg tttcattgcc accacttagt ggatgtcatt tagaaccatt ttgtctgctc      60
cctctggaag ccttgccgag agcggacttt gtaattgttg gagaataact gctgaatttt      120
wagctgtttk gagttgatts gcaccactgc acccacaact tcaatatgaa aacyawttga      180
actwatttat tatcttgtga aaagtataac aatgaaaatt ttgttcatac tgtattkatc      240

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aagtatgatg	aaaagcaawa	gatatatatt	cttttattat	gttaaattat	gattgccatt	300
attaatcggc	aaaatgtgga	gtgtatgttc	ttttcacagt	aatatatgcc	ttttgtaact	360
tcacttggtt	atttttattgt	aatgartta	caaaattctt	aatttaagar	aatgggtatgt	420
watattttatt	tcattaattt	ctttcctkgt	ttacgtwaat	tttgaaaaga	wtgcatgatt	480
tcttgacaga	aatcgatctt	gatgctgtgg	aagtagtttg	acccacatcc	ctatgagttt	540
ttcttagaat	gtataaagg	tgtagcccat	cnaacttcaa	agaaaaaaat	gaccacatac	600
tttgcaatca	ggctgaaatg	tggcatgctn	ttctaattcc	aactttataa	actagcaaan	660
aagtg						665

<210> 197

<211> 492

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(492)

<223> n = A,T,C or G

<400> 197

ttttnttttt	ttttttttgc	aggaaggatt	ccattttattg	tggatgcatt	ttcacaatat	60
atgttttattg	gagcgatcca	ttatcagtga	aaagtatcaa	gtgtttataa	natttttagg	120
aaggcagatt	cacagaacat	gctngtcngc	ttgcagtttt	acctcgtana	gatnacagag	180
aattatagtc	naaccagtaa	acnaggaatt	tacttttcaa	aagattaaat	ccaaactgaa	240
caaaattcta	ccctgaaact	tactccatcc	aaatattgga	ataanagtca	gcagtgatac	300
attctcttct	gaactttaga	ttttctagaa	aaatatgtaa	tagtgatcag	gaagagctct	360
tgttcaaaaag	tacaacnaag	caatgttccc	ttaccatagg	ccttaattca	aactttgatc	420
catttcactc	ccatcacggg	agtcaatgct	acctggggaca	cttgtatttt	gttcatnctg	480
ancntggctt	aa					492

<210> 198

<211> 478

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(478)

<223> n = A,T,C or G

<400> 198

ttttnttttgn	atttcantct	gtannaanta	ttttcattat	gtttattana	aaaatatnaa	60
tgntntccacn	acaaatcatn	ttacntnagt	aagaggccan	ctacattgta	caacatacac	120
tgagtatatt	ttgaaaagga	caagttttaa	gtanacncat	attgccganc	atancacatt	180
tatacatggc	ttgattgata	tttagcacag	canaaaactga	gtgagttacc	agaaanaaat	240
natatatgtc	aatcngattt	aagatacaaa	acagatccta	tggtacatan	catcntgtag	300
gagttgtggc	tttatgttta	ctgaaagtca	atgcagttcc	tgtacaaaga	gatggccgta	360
agcattctag	tacctctact	ccatgggttaa	gaatcgtaca	cttatgttta	catatgtntca	420
gggtaagaat	tgtgttaagt	naanttatgg	agaggtccan	gagaaaaatt	tgatncaa	478

<210> 199

<211> 482

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(482)

<223> n = A,T,C or G

<400> 199

agtgacttgt	cctccaacaa	aacccttga	tcaagtttgt	ggcactgaca	atcagaccta	60
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tgctagttcc	tgtcatctat	tcgctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cctacttgta	cggactttga	180
agtgattcag	tttcctctac	ggatgagaga	ctgggtcaag	aatatcctca	tgcagcttta	240
tgaagccnac	tctgaacacg	ctggttatct	nagatgagaa	ncagagaaat	aaagtcnaga	300
aaatttacct	ggangaaaag	aggctttngg	ctggggacca	tcccattgaa	ccttctctta	360
anggacttta	agaanaaaact	accacatgtn	tgtngtatcc	tggtgccngg	ccgtttantg	420
aacntngacn	ncacccttnt	ggaatanant	cttgacngcn	tcctgaactt	gctcctctgc	480
ga						482

<210> 200
 <211> 270
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(270)
 <223> n = A,T,C or G

cgggccgcaag	tgcaactcca	gctggggccg	tgcggacgaa	gattctgcca	gcagttgggtc	60
cgactgcgac	gacggcgggc	gcgacagtcg	caggtgcagc	gcgggcgccct	ggggctctgc	120
aaggctgagc	tgacgccgca	gaggtcgtgt	cacgtccac	gaccttgacg	ccgtcgggga	180
cagccggaac	agagcccggt	gaangcggga	ggcctcgggg	agcccctcgg	gaagggcggc	240
ccgagagata	cgcaggtgca	ggtggccgcc				270

<210> 201
 <211> 419
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(419)
 <223> n = A,T,C or G

tttttttttt	ttttggaatc	tactgcgagc	acagcaggtc	agcaacaagt	ttattttgca	60
gctagcaagg	taacagggtg	gggcatgggt	acatgttcag	gtcaacttcc	tttgtcgtgg	120
ttgattgggt	tgtcttttat	ggggcggggt	ggggtagggg	aaancgaagc	anaantaaca	180
tgagtggggt	gcacccctcc	tgtagaacct	ggttacnaaa	gcttggggga	gttcacctgg	240
tctgtgaccg	tcattttctt	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggaggggg	attagggttt	cttgccaana	tccaancaaa	atccacntga	360
aaaagtggga	tgatncangt	acngaatacc	ganggcatan	ttctcatant	cggtggcca	419

<210> 202
 <211> 509
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(509)
 <223> n = A,T,C or G

ttnttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	ttnaatncnc	cattatacng	120
gtnattttnc	aaaatctaaa	nnttattcaa	atntnagcca	aantccttac	ncaaatnnaa	180
tacnncnaaa	aatcaaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctgggtgtt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnaa	300
ggaactaaaa	taaaaaaaaa	cactnccgca	aagggtaaag	ggaacaacaa	attcntttta	360

caacancnnc	nattataaaa	atcatatctc	aaatccttagg	ggaatatata	cttcacacng	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggcccaaca	480
caatggnaat	ncncncnc	tggaactagt				509

<210> 203
 <211> 583
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(583)
 <223> n = A,T,C or G

<400> 203						
tttttttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaaac	tgccataaag	180
gaaaatcttc	tctagctctt	ttgactgtaa	atttttgact	cttgtaaaaac	atccaaattc	240
atttttcttg	tctttaaaaa	tatctaattc	ttccattttt	tccctattcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggcct	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tatttctacc	420
tacgttaata	aaatagcatt	ttgtgaagcc	agctcaaaaag	aaggcttaga	tccttttatg	480
tccatttttag	tcactaaaacg	atatcnaaag	tgccagaatg	caaaaagggtt	gtgaacattt	540
attcaaaaagc	taatataaga	tatttcacat	actcatcttt	ctg		583

<210> 204
 <211> 589
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(589)
 <223> n = A,T,C or G

<400> 204						
ttttttttnt	tttttttttt	ttttttntct	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcaactct	tagatagggc	atgaagaaaa	ctcatctttc	cagcttttaa	ataacaatca	120
aatctcttat	gctatatcat	attttaagtt	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaa	ctgttcattc	ttctcattca	tatagttata	tcaagtacta	ccttgcatat	240
tgagagggtt	ttcttctcta	tttacacata	tattttccatg	tgaatttgta	tcaaaccctt	300
attttcatgc	aaactagaaa	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
cattacaaaa	ctgctcaaat	tgtttggtta	gnntatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacatttac	ngacnagcaa	taataaaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	ccntagccca	acacaatgg		589

<210> 205
 <211> 545
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(545)
 <223> n = A,T,C or G

<400> 205						
ttttnttttt	ttttttcagt	aataatcaga	acaatattta	tttttatatt	taaaattcat	60
agaaaagtgc	cttacattta	ataaaaagttt	gtttctcaaa	gtgatcagag	gaattagata	120
tngtcttgaa	caccaatatt	aatttgagga	aaatacacca	aaatacatta	agtaaattat	180

ttaagatcat	agagcttgta	agtgaaaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggaacttctt	gctttaattt	tgtgatgaat	300
atggggtgtc	actggtaaac	caacacattc	tgaaggatac	attacttagt	gatagattct	360
tatgtacttt	gctanatnac	gtggatatga	gttgacaagt	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaagaa	aaggattacg	catactgttc	tttctatngg	480
aaggattaga	tatgtttcct	ttgccaatat	taaaaaaata	ataatgttta	ctactagtga	540
aaccc						545

<210> 206
 <211> 487
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(487)
 <223> n = A,T,C or G

<400> 206	
tttttttttt	tttttttagtc aagtttctna tttttattat aattaaagtc ttggtcattt 60
catttatttag	ctctgcaact tacatattta aattaaagaa acgttnttag acaactgtna 120
caattttataa	atgtaagggtg ccattattga gtanatatat tcctccaaga gtggatgtgt 180
cccttctccc	accaactaat gaancagcaa cattagttaa attttatttag tagatnatac 240
actgctgcaa	acgctaattc tcttctccat ccccatgtng atattgtgta tatgtgtgag 300
ttggttagaa	tgcatcanca atctnacaat caacagcaag atgaagctag gcntgggctt 360
tcggtgaaaa	tagactgtgt ctgtctgaat caaatgatct gacctatcct cggtggcaag 420
aactcttcga	accgcttcct caaaggcngc tgccacattt gtggcntctn ttgcacttgt 480
ttcaaaa	
	487

<210> 207
 <211> 332
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(332)
 <223> n = A,T,C or G

<400> 207	
tgaattggct	aaaagactgc atttttanaa ctagcaactc ttatttcttt cctttaaaaa 60
tacatagcat	taaatcccaa atcctattta aagacctgac agcttgagaa ggtcactact 120
gcattttatag	gaccttctgg tggttctgct gttacntttg aantctgaca atccttgana 180
atctttgcat	gcagaggagg taaaagggtat tggattttca cagaggaana acacagcgca 240
gaaatgaagg	ggccaggctt actgagcttg tccactggag ggctcatggg tgggacatgg 300
aaaagaaggc	agcctaggcc ctggggagcc ca
	332

<210> 208
 <211> 524
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(524)
 <223> n = A,T,C or G

<400> 208	
agggcgtggt	gcgaggggcg ttactgtttt gtctcagtaa caataaatac aaaaagactg 60
gttgtgttcc	ggccccatcc aaccacgaag ttgatttctc ttgtgtgcag agtgactgat 120
tttaaaggac	atggagcttg tcacaatgtc acaatgtcac agtgtgaagg gcacactcac 180
tcccgcgtga	ttcacattta gcaaccaaca atagctcatg agtcatact tgtaaatact 240

tttggcagaa	tacttnttga	aacttgcaga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaatta	cctgttcaca	tcagcttcca	tttacaagtc	360
atgagcccag	acactgacat	caaactaagc	ccacttagac	tcctcaccac	cagtctgtcc	420
tgtcatcaga	caggaggctg	tcaccttgac	caaattctca	ccagtcaatc	atctatccaa	480
aaaccattac	ctgatccact	tccggtaatg	caccaccttg	gtga		524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209						
gggtgaggaa	atccagagtt	gccatggaga	aaattccagt	gtcagcattc	ttgtctcttg	60
tggccctctc	ctacactctg	gccagagata	ccacagtcaa	acctggagcc	aaaaaggaca	120
caaaggactc	tcgacccaaa	ctgccccaga	ccctctcca			159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(256)
 <223> n = A,T,C or G

<400> 210						
actccctggc	agacaaaggc	agaggagaga	gctctgttag	ttctgtgttg	ttgaactgcc	60
actgaatttc	tttccacttg	gactattaca	tgccanttga	gggactaatg	gaaaaacgta	120
tggggagatt	ttanccaatt	tangtntgta	aatggggaga	ctggggcagg	cgggagagat	180
ttgcagggtg	naaatgggan	ggctgggttg	ttanatgaac	agggacatag	gaggtaggca	240
ccaggatgct	aaatca					256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 211						
acattgtttt	tttgagataa	agcattgaga	gagctctcct	taacgtgaca	caatggaagg	60
actggaacac	ataccacat	ctttgttctg	agggataatt	ttctgataaa	gtcttgctgt	120
atattcaagc	acatatgtta	tatattattc	agttccatgt	ttatagccta	gttaaggaga	180
ggggagatac	attcngaaag	aggactgaaa	gaaatactca	agtnggaaaa	cagaaaaaga	240
aaaaaaggag	caaatgagaa	gcct				264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 212						
acccaaaaat	ccaatgctga	atatttggtc	tcattattcc	canattcttt	gattgtcaaa	60

ggattttaatg	ttgtctcagc	ttgggcactt	cagttaggac	ctaaggatgc	cagccggcag	120
gtttatatat	gcagcaacaa	tattcaagcg	cgacaacagg	ttattgaact	tgcccgccag	180
ttnaattttca	ttcccattga	cttgggatcc	ttatcatcag	ccagagagat	tgaaaattta	240
cccctacnac	tctttactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
tttttttttc	ctttattcct	ttgtcaga				328

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 213

acttatgagc	agagcgacat	atccnagtgt	agactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatcggt						250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(444)

<223> n = A,T,C or G

<400> 214

accagaatc	caatgctgaa	tatttggtt	cattattccc	agattctttg	attgtcaaag	60
gattttaatg	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacagg	tattgaactt	gcccggcagg	180
tgaatttcat	tcccattgac	ttgggatcct	tatcatcagc	canagagatt	gaaaatttac	240
ccctacgact	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	tttattcctt	tgtcagagat	gcgattcatc	catatgctan	aaaccaacag	360
agtgactttt	acaaaattcc	tataganatt	gtgaataaaa	ccttacctat	agttgccatt	420
actttgctct	ccctaataata	cctc				444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(366)

<223> n = A,T,C or G

<400> 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acattttcaat	tctccaaact	tcttcctcat	tccaagagtt	180
ttcaatattt	gcatgaacct	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatcggt	aagcagaggg	tgtaggcaac	atggaccata	gcgaanaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccaggt	ttccaaccaa	ggtggaaatc	tcctatactt	360
ggtgcc						366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccac tgcangaggg agggccgggc caggagaatc tccgcttgtc 60
 caagacaggg gcctaaggag ggtctccaca ctgctnntaa gggctntnc atttttttat 120
 taataaaaag tnnaaaaggc ctcttctcaa cttttttccc ttnggctgga aaatttaaaa 180
 atcaaaaatt tcctnaagtt ntcaagctat catatatact ntatcctgaa aaagcaacat 240
 aattcttcct tccctccttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggaacgca tataattgta 60
 tcttgccctat aattttctat tttaataagg aaatagcaaa ttgggggtggg gggaatgtag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaaaaatttt 180
 atgaataatc tgtatgatta tatgtctcta gagtagattt ataattagcc acttacccta 240
 atatccttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(205)
 <223> n = A,T,C or G

<400> 218
 accaaggtgg tgcattaccg gaantggatc aangacacca tegtggccaa cccctgagca 60
 cccctatcaa ctcccttttg tagtaaaactt ggaaccttgg aaatgaccag gccaagactc 120
 aggctcccc agttctactg acctttgtcc ttangntna ngtcagggt tgctaggaaa 180
 anaaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gccccatcca 60
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tgga 114

<210> 220
 <211> 93
 <212> DNA

<213> Homo sapien

<400> 220

actagccagc acaaaaggca gggtagcctg aattgctttc tgctctttac atttctttta 60
aaataagcat ttagtgctca gtcctactg agt 93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(167)

<223> n = A,T,C or G

<400> 221

actangtgca ggtgcgcaca aatatttgtc gatattccct tcatcttgga ttccatgagg 60
tcttttgccc agcctgtggc tctactgtag taagtttctg ctgatgagga gccagnatgc 120
ccccactac cttccctgac gctccccaana aatcacccaa cctctgt 167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

agggcggtggt gcggaggggcg gtactgacct cattagtagg aggatgcatt ctggcacccc 60
gttcttcacc tgtcccccacaa tccttaaaaag gccatactgc ataaagtcaa caacagataa 120
atgtttgctg aattaaagga tggatgaaaa aaattaataa tgaatttttg cataatccaa 180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240
taggtgagca tgattagaga gcttgtagggt tgcttttaca tatatctggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaaagggt ggtattattg tattgataag t 351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 223

aaaacaaaca aacaaaaaaa acaattcttc attcagaaaa attatcttag ggactgatat 60
tggttaattat ggtcaattta atwrttrtkt ggggcatttc cttacattgt cttgacaaga 120
ttaaaatgtc tgtgccaaaa ttttgtattt tatttggaga cttcttatca aaagtaatgc 180
tgccaaagga agtctaagga attagtagtg ttcccmctac ttgtttggag tgtgctattc 240
taaaagattt tgatttcctg gaatgacaat tatatttttaa ctttggtggg ggaaanagtt 300
ataggaccac agtcttcact tctgatactt gtaaattaat cttttattgc acttgttttg 360
accattaagc tatatgttta aaa 383

<210> 224

<211> 320

<212> DNA

<213> Homo sapien

<400> 224

cccctgaagg cttcttggtta gaaaatagta cagttacaac caataggaac aacaaaaaga 60
aaaagtttgt gacattgtag tagggagtgt gtaccctta ctcccatca aaaaaaaat 120
ggatacatgg ttaaaggata raagggaat attttatcat atgttctaaa agagaaggaa 180

gagaaaatac	tacttttctc	aaatggaagc	ccttaaaggt	gctttgatac	tgaaggacac	240
aaatgtggcc	gtccatcctc	ctttaragtt	gcatgacttg	gacacggtaa	ctgttgagct	300
tttaractcm	gcattgtgac					320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225						
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aactcctaca	ccatcggtgt	gggcctgcac	agtcttgagg	ccgaccaaga	gccagggagc	180
cagatgggtg	aggccagcct	ctccgtacgg	cacccagagt	acaacagacc	cttgctcgct	240
aacgacctca	tgctcatcaa	gttggacgaa	tccgtgtccg	agtctgacac	catccggagc	300
atcagcattg	cttcgcagtg	ccctaccgcg	gggaactctt	gcctcgtttc	tggctggggt	360
ctgctggcga	acggcagaat	gcctaccgtg	ctgcagtgcg	tgaacgtgtc	ggtggtgtct	420
gaggaggtct	gcagtaagct	ctatgaccgg	ctgtaccacc	ccagcatggt	ctgcgccggc	480
ggagggcaag	accagaagga	ctcctgcaac	ggtgactctg	gggggcccct	gatctgcaac	540
gggtacttgc	agggccttgt	gtctttcgga	aaagccccgt	gtggccaagt	tggcgtgcca	600
ggtgtctaca	ccaacctctg	caaattcact	gagtggatag	agaaaaccgt	ccaggccagt	660
taactctggg	gactgggaac	ccatgaaatt	gacccccaaa	tacatcctgc	ggaaggaatt	720
caggaatata	tgttcccagc	ccctcctccc	tcaaggcccag	gagtccaggc	ccccagcccc	780
tcctccctca	aaccaagggt	acagatcccc	agccccctct	ccctcagacc	caggagtcca	840
gacccccagc	cccctcctcc	ctcagaccca	ggagtccagc	ccctcctccc	tcagaccagc	900
gagtccagac	ccccagcccc	ctcctccctc	agacccaggg	gtccaggccc	ccaacccctc	960
ctccctcaga	ctcagagggt	caagccccca	acccctcctt	ccccagaccc	agaggtccag	1020
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cagtgcctcc	ttgtggcacg	ttgacccaac	cttaccagtt	ggtttttcat	tttttgtccc	1140
tttcccttag	atccagaaat	aaagtctaag	agaagcgcaa	aaaaaaaaaa	aaaaaaaaaa	1200
aaaaaaaaaa	aaaa					1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226						
accagtatg	tgcagggaga	cggaacccca	tgtgacagcc	cactccacca	gggttcccaa	60
agaacctggc	ccagtcataa	tcattcatcc	tgacagtggc	aataatcacg	ataaccagt	119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227						
acaattcata	gggacgacca	atgaggacag	ggaatgaacc	cggtctctcc	ccagccctga	60
tttttgctac	atatgggggt	ccttttcatt	ctttgcaaaa	acactggggt	ttctgagaac	120
acggacgggt	cttagcacia	tttgtgaaat	ctgtgtaraa	ccgggctttg	caggggagat	180
aattttcctc	ctctggagga	aaggtggtga	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgctcggcct	tctctgaacc	aggatggaac	ggcagacccc	tgaaaacgaa	300
gcttgtcccc	ttccaatcag	ccacttctga	gaacccccat	ctaacttctc	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaact	accatctaga	420
ggaaagggtg	caccctcagc	agagaagccg	agagcttaac	tctggtcgtt	tccagagaca	480
acctgctggc	tgtcttggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggacatgaag	ctgaggacac	tgggcttcaa	cactgagttg	tcatgagagg	600
gacaggtctc	gccctcaagc	cggtcgaggg	cagcaaccac	tctcctcccc	tttctcacgc	660
aaagccattc	ccacaaatcc	agaccatacc	atgaagcaac	gagacccaaa	cagtttggct	720
caagaggata	tgaggactgt	ctcagcctgg	ctttgggctg	acaccatgca	cacacacaag	780
gtccacttct	aggttttcag	cctagatggg	agtcgtgt			818

74

<210> 228
 <211> 744
 <212> DNA
 <213> Homo sapien

<400> 228
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 gtcattgacgt ttgacatacc tttggaacga gcctcctcct tggaagatgg aagaccgtgt 120
 tcgtggccga cctggcctct cctggcctgt ttcttaagat gcggagtcac atttcaatgg 180
 taggaaaagt ggcttcgtaa aatagaagag cagtcactgt ggaactacca aatggcgaga 240
 tgctcgggtgc acattgggggt gctttgggat aaaagattta tgagccaact attctctggc 300
 accagattct aggccagttt gttccactga agcttttccc acagcagtcc acctctgcag 360
 gctggcagct gaatggcttg ccggtggctc tgtggcaaga tcacactgag atcgatgggt 420
 gagaaggcta ggatgcttgt ctagtgttct tagctgtcac gttggctcct tccaggttgg 480
 ccagacgggtg ttggccactc ccttctaaaa cacaggcgcc ctctgggtga cagtgacccg 540
 ccgtgggatg ccttggccca ttccagcagt cccagttatg catttcaagt ttggggtttg 600
 ttcttttcgt taatgttcct ctgtgttgtc agctgtcttc atttcctggg ctaagcagca 660
 ttggggagatg tggaccagag atccactcct taagaaccag tggcgaaaaga cactttcttt 720
 cttcactctg aagtagctgg tggt 744

<210> 229
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 229
 cgagtctggg ttttgtctat aaagtttgat ccctcctttt ctcatccaaa tcatgtgaac 60
 cattacacat cgaaataaaa gaaagggtggc agacttgccc aacgccaggc tgacatgtgc 120
 tgcagggttg ttgtttttta attattattg ttagaaacgt caccacacagt cctgtttaat 180
 ttgtatgtga cagccaactc tgagaaggtc ctatttttcc acctgcagag gatccagtct 240
 cactaggctc ctcttgccc tcacactgga gtctccgcca gtgtgggtgc ccactgacat 300

<210> 230
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 230
 cagcagaaca aatacaata tgaagagtgc aaagatctca taaaatctat gctgaggaat 60
 gagcgacagt tcaaggagga gaagcttgca gagcagctca agcaagctga ggagctcagg 120
 caatataaag tcttggttca cactcaggaa cgagagctga cccagttaag ggagaagttg 180
 cgggaaggga gagatgcctc cctctcattg aatgagcatc tccaggccct cctcactccg 240
 gatgaaccgg acaagtccca ggggcaggac ctccaagaaa cagacctcgg ccgcgaccac 300
 g 301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 gcaagcacgc tggcaaatct ctgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaactcc aagtccacat ccttggcaac tggggacttg cgcaggttag ccttgaggat 120
 ggcaacacgg gacttctcat caggaagtgg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg gcaggatcaa tgatgtcagg ccggttggtg ccgccaatga tgaacacatt 240
 tttttttgtg gacatgccat ccatttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 232
 agtaggtatt tcgtgagaag ttcaacacca aaactggaac atagttctcc ttcaagtgtt 60
 ggcgacagcg gggcttcctg attctggaat ataactttgt gtaaattaac agccacctat 120
 agaagagtcc atctgctgtg aaggagagac agagaactct gggttccgtc gtcctgtcca 180
 cgtgctgtac caagtgtctg tgccagcctg ttacctgttc tcaactgaaa tctggctaata 240
 gctcttgtgt atcacttctg attctgacaa tcaatcaatc aatggcctag agcactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tcccagtaag gctctctaag gggttaagtag gaggatccac aggatttgag 60
 atgctaaggc cccagagatc gtttgatcca accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt acagagcatc tagctggtgc gctggcacc cttggcctcac acagactccc 180
 gagttagctgg gactacaggc acacagtcac tgaagcaggc cctggttagca attctatgag 240
 tacaaattaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtcctaca catcgagact catccatgat tgatatgaat ttaaaaatta caagcaaaga 60
 cattttattc atcatgatgc tttcttttgt ttcttctttt cgttttcttc tttttctttt 120
 tcaatttcag caacatactt ctcaatttct tcaggattta aaatcttgag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgcc 240
 ttgatcacca gcttaatggg cagatcatct gcttcaatgg ctctcgtagt atagttcttc 300
 t 301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235
 tggggctgtg catcagggcg gtttgagaaa tattcaattc tcagcagaag ccagaatttg 60
 aattccctca tcttttaggg aatcatttac caggtttgga gaggattcag acagctcagg 120
 tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata 180
 atgttatctt tgaactgatg ctcataggag agaataaag aactctgagt gatatcaaca 240
 ttagggattc aaagaaatat tagatttaag ctcacactgg tca 283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236
 aggtcctcca ccaactgcct gaagcacggg taaaattggg aagaagtata gtgcagcata 60
 aatactttta aatcgatcag atttccttaa cccacatgca atcttcttca ccagaagagg 120
 tcggagcagc atcatthaata ccaagcagaa tgcgtaatag ataaatacaa tggatatatg 180
 tgggtagacg gtttcatgag tacagtgtac tgtggtagatg taatctggac ttgggttgta 240
 aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc 300
 a 301

<210> 237
 <211> 301

<212> DNA

<213> Homo sapien

<400> 237

cagtggtagt	ggtggtggac	gtggcggttg	tcgtggtgcc	ttttttggtg	cccgtcacaa	60
actcaatttt	tgttcgctcc	tttttggcct	tttccaattt	gtccatctca	attttctggg	120
ccttggctaa	tgctcatag	taggagtcct	cagaccagcc	atggggatca	aacatatcct	180
ttgggtagtt	ggtgccaagc	tcgtcaatgg	cacagaatgg	atcagcttct	cgtaaatcta	240
gggttccgaa	attctttctt	cctttggata	atgtagttca	tatccattcc	ctcctttatc	300
t						301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238

gggcagggtt	tttttttttt	ttttttgatg	gtgcagaccc	ttgctttatt	tgtctgactt	60
gttcacagtt	cagccccctg	ctcagaaaac	caacgggcca	gctaaggaga	ggaggaggca	120
ccttgagact	tccggagtcg	aggctctcca	gggttcccca	gcccatcaat	cattttctgc	180
accccctgcc	tgggaagcag	ctccctgggg	ggtgggaatg	ggtgactaga	agggatttca	240
gtgtgggacc	cagggtctgt	tcttcacagt	aggaggtgga	agggatgact	aatttcttta	300
t						301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239

ataagcagct	aggggaattct	ttatttagta	atgtcctaac	ataaaaagttc	acataactgc	60
ttctgtcaaa	ccatgatact	gagctttgtg	acaacccaga	aataactaag	agaaggcaaa	120
cataatacct	tagagatcaa	gaaacattta	cacagttcaa	ctgtttaaaa	atagctcaac	180
attcagccag	tgagtagagt	gtgaatgcca	gcatacacag	tatacaggtc	cttcaggga	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggtcctaattg	aagcagcagc	ttccacattt	taacgcaggt	ttacggtgat	actgtccttt	60
gggatctgcc	ctccagtgga	acctttttaag	gaagaagtgg	gcccaagcta	agttccacat	120
gctgggtgag	ccagatgact	tctgttccct	ggtcactttc	ttcaatgggg	cgaatggggg	180
ctgccagggt	tttaaaatca	tgcttcatct	tgaagcacac	ggtcacttca	ccctcctcac	240
gctgtgggtg	tactttgatg	aaaataccca	ctttgttggc	ctttctgaag	ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gaggtctggt	gctgaggtct	ctgggctagg	aagaggagtt	ctgtggagct	ggaagccaga	60
cctcttttga	ggaaactcca	gcagctatgt	tggtgtctct	gaggggaatgc	aacaaggctg	120
ctcctccatg	tattggaaaa	ctgcaaactg	gactcaactg	gaagggaagtg	ctgctgccag	180
tgtgaagaac	cagcctgagg	tgacagaaac	ggaagcaaac	aggaacagcc	agtcttttct	240
tcctcctcct	gtcatacggt	ctctctcaag	catcctttgt	tgtcaggggc	ctaaaaggga	300
g						301

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggtcct	gggatgcaac	caatcactct	gtttcacgtg	acttttatca	ccatacaatt	60
tgtggcattt	cctcattttc	tacattgtag	aatcaagagt	gtaaataaat	gtatatcgat	120
gtcttcaaga	atatatcatt	cctttttcac	tagaaccat	tcaaaatata	agtcaagaat	180
cttaatatca	acaaatatat	caagcaaact	ggaaggcaga	ataactacca	taatttagta	240
taagtaccca	aagttttata	aatcaaaagc	cctaagtata	accattttta	gaattcaatc	300
a						301

<210> 243

<211> 301

<212> DNA

<213> Homo sapien

<400> 243

aggtaagtcc	cagtttgaag	ctcaaaagat	ctggtatgag	cataggctca	tcgacgacat	60
ggtggcccaa	gctatgaaat	cagagggagg	cttcatctgg	gcctgtaaaa	actatgatgg	120
tgacgtgcag	tcggactctg	tggcccaagg	gtatggctct	ctcggcatga	tgaccagcgt	180
gctggtttgt	ccagatggca	agacagtaga	agcagaggct	gcccacggga	ctgtaaccgc	240
tcactaccgc	atgttccaga	aaggacagga	gacgtccacc	aatcccattg	cttccatttt	300
t						301

<210> 244

<211> 300

<212> DNA

<213> Homo sapien

<400> 244

gctggtttgc	aagaatgaaa	tgaatgattc	tacagctagg	acttaacctt	gaaatggaaa	60
gtcatgcaat	cccatttgca	ggatctgtct	gtgcacatgc	ctctgtagag	agcagcattc	120
ccagggacct	tggaacacgt	tgacactgta	aggtgcttgc	tccccaagac	acatcctaaa	180
aggtgtttgta	atggtgaaaa	cgtcttcctt	ctttattgcc	ccttcttatt	tatgtgaaca	240
actgtttgtc	ttttgtgtat	ctttttttaa	ctgtaaagtt	caattgtgaa	aatgaatata	300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat	ttaaaatggt	attgaaatta	tccccaacca	atgttagaaa	agaaagaggt	60
tatatactta	gataaaaaat	gaggtgaatt	actatccatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaatgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcaaag	agcagagatg	caattaaata	ttgttttagca	tcaaaaaggc	cactcaatac	240
agctaataaa	atgaaagacc	taatttctaa	agcaattctt	tataattttac	aaagttttta	300
g						301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaaata	60
acctggggctt	atttttaaaga	actatttgta	gtcagatttg	gttttcctat	ggctaaaaata	120
agtgccttct	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgttaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtttga	catgctctaa	agtgcacaacc	240
caaagtgtgc	ttacaaaaca	cgttcctaac	aaggtatgct	ttacactacc	aatgcagaaa	300
c						301

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 247
 aggtcctttg gcagggtca tggatcagag ctcaaactgg agggaaaggc atttcgggta 60
 gcctaagagg gcgactggcg gcagcacaac caaggaaggc aaggttggtt cccccacgct 120
 gtgtcctgtg ttcagggtcg acacacaatc ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caaggttggg gcttaagtgg attaaggag gcaagttctg ggttccttgc 240
 cttttcaaac catgaagtca ggctctgtat ccctcctttt cctaactgat attctaacta 300
 a 301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaagta caccctcact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactagccaa cttaagaatt 120
 acaggaagaa agtggtttgg aagacagcca aagaaataaa agcagattaa attgtatcag 180
 gtacattcca gctgttggc aactccataa aaacatttca gattttaatc ccgaatttag 240
 ctaatgagac tggatttttg ttttttatgt tgtgtgtcgc agagctaaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
 gtccagagga agcacctggt gctgaactag gcttgccctg ctgtgaactt gcacttggag 60
 ccctgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgcgatctc cgccccgcc 120
 ccaggagac acagcagtga ctcagagctg gtcgcacact gtgcctccct cctcaccgcc 180
 catcgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggatggaaag 240
 actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgactttc ttagtcattt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
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 cttatcttta ttggcttgat aaacataatt atttctaaca ctagcttatt tccagttgcc 120
 cataagcaca tcagtacttt tctctggctg gaatagtaaa ctaaagtatg gtacatctac 180
 ctaaaagact actatgtgga ataatacata ctaatgaagt attacatgat ttaaagacta 240
 caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatacat gattgaaacc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtcc tacatttggc ccagtttccc cctgcctcct ctccagggcc cctgcctcat 60
 agacaacctc atagagcata ggagaactgg ttgccctggg ggcaggggga ctgtctggat 120
 ggcagggggtc ctcaaaaatg ccactgtcac tgccaggaaa tgcttctgag cagtacacct 180
 cattgggatc aatgaaaagc ttcaagaaat cttcaggctc actctcttga aggcccggaa 240

cctctggagg ggggcagtg aatcccagct ccaggacgga tcctgtcgaa aagatatacct 300
c 301

<210> 252
<211> 301
<212> DNA
<213> Homo sapien

<400> 252
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ttttctacat tgtagaatca agagtgtaaa taaatgtata tcgatgtctt caagaatata 120
tcattccttt ttcactagga acccattcaa aatataagtc aagaatctta atatcaacaa 180
atatatcaag caaactggaa ggcagaataa ctaccataat ttagtataag tacccaaagt 240
tttataaatc aaaagcccta atgataacca tttttagaat tcaatcatca ctgtagaatc 300
a 301

<210> 253
<211> 301
<212> DNA
<213> Homo sapien

<400> 253
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caactaaaaa aaaaaaataa agaaaaaatg tgctgcgttc tgaaaaataa ctccttagct 120
tggctcgatt gttttcagac cttaaaatat aaacttggtt cacaagcttt aatccatgtg 180
gatttttttt cttagagaac cacaaaacat aaaaggagca agtcggactg aatacctgtt 240
tccatagtgc ccacagggtta ttcttcacat tttctccata ggaaaatgct ttttcccaag 300
g 301

<210> 254
<211> 301
<212> DNA
<213> Homo sapien

<400> 254
cgctgcgcct ttcccttgagg ggaggggcaa ggccagaggg ggtccaagtg cagcacgagg 60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaatcccc 120
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa 180
gaaaaaaata aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgcc 300
t 301

<210> 255
<211> 302
<212> DNA
<213> Homo sapien

<400> 255
agcttttttt tttttttttt tttttttttt ttcattaaaa aatagtgtctc tttattataa 60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacttggat 120
tggtgatttt ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg 180
aggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagattgta 240
aacattatta aaaaacaaga aacaaacaaa aaaatagaga aaaaaaccac cccaacacac 300
aa 302

<210> 256
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

80

<222> (1)...(301)

<223> n = A,T,C or G

<400> 256

gttccagaaa	acattgaagg	tggtttccca	aagtctaact	agggataccc	cctctagcct	60
aggaccctcc	tccccacacc	tcaatccacc	aaaccatcca	taatgcaccc	agataggccc	120
acccccaaaa	gcctggacac	cttgagcaca	cagttatgac	caggacagac	tcctctctat	180
aggcaaatag	ctgctggcaa	actggcatta	cctggtttgt	ggggatgggg	gggcaagtgt	240
gtggcctctc	ggcctgggta	gcaagaacat	tcagggtagg	cctaagttan	tcgtgttagt	300
t						301

<210> 257

<211> 301

<212> DNA

<213> Homo sapien

<400> 257

gttgtggagg	aactctggct	tgctcattaa	gtcctactga	ttttcactat	cccctgaatt	60
tccccactta	tttttgtctt	tcactatcgc	aggccttaga	agaggtctac	ctgcctccag	120
tcttacctag	tccagtctac	cccctggagt	tagaatggcc	atcctgaagt	gaaaagtaat	180
gtcacattac	tcccttcagt	gatttcttgt	agaagtgcc	atccctgaat	gccaccaaga	240
tcttaatctt	cacatcttta	atcttatctc	tttgactcct	ctttacaccg	gagaaggctc	300
c						301

<210> 258

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 258

cagcagtagt	agatgccgta	tgccagcacg	cccagcactc	ccaggatcag	caccagcacc	60
agggggccag	ccaccaggcg	cagaagcaag	ataaacagta	ggctcaagac	cagagccacc	120
cccagggcaa	caagaatcca	ataccaggac	tgggcaaaat	cttcaaagat	cttaacactg	180
atgtctcggg	cattgaggct	gtcaataana	cgctgatccc	ctgctgtatg	gtggtgtcat	240
tggatgatcc	tgggagcgcc	ggtggagtaa	cgttgggtcca	tggaaagcag	cgcccacaac	300
t						301

<210> 259

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 259

tcatatatgc	aaacaaatgc	agactangcc	tcaggcagag	actaaaggac	atctcttggg	60
gtgtcctgaa	gtgatattga	cccctgaggg	cagacaccta	agtaggaatc	ccagtgggaa	120
gcaaagccat	aaggaagccc	aggattcctt	gtgatcagga	agtgggccag	gaagggtctg	180
tccagctcac	atctcatctg	catgcagcac	ggaccggatg	cgcccactgg	gtcttggctt	240
ccctcccatc	ttctcaagca	gtgtccttgt	tgagccattt	gcctccttgg	ctccagggtg	300
c						301

<210> 260

<211> 301

<212> DNA
<213> Homo sapien

<400> 260
 ttttttttct ccctaaggaa aaagaaggaa caagtctcat aaaaccaa at aagcaatggt 60
 aaggtgtctt aacttgaaaa agattaggag tcaactggtt acaagttata attgaatgaa 120
 agaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaaca caggattaac 180
 tagggcaaaa taaataagtg tgtggaagcc ctgataagtg cttaataaac agactgattc 240
 actgagacat cagtacctgc ccgggcggcc gtcgagccg aattctgcag atatccatca 300
 c 301

<210> 261
<211> 301
<212> DNA
<213> Homo sapien

<400> 261
 aaatattcga gcaaatcctg taactaatgt gtctccataa aaggctttga actcagtga 60
 tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaagctcc tcttaagggt 120
 agcaccaact attccataca attcatcagc aggaaataaa ggctcttcag aaggttcaat 180
 ggtgacatcc aattttcttct gataatttag attcctcaca accttcctag ttaagtgaag 240
 ggcattgatga tcatccaaag ccagtggtc acttactcca gactttctgc aatgaagatc 300
 a 301

<210> 262
<211> 301
<212> DNA
<213> Homo sapien

<400> 262
 gaggagagcc tgttacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc 60
 tgtgagcttc ttgccgcaag tctctcagaa atttaaaaag atgcaaatcc ctgagtcacc 120
 cctagacttc ctaaaccaga tcctctgggg ctggaacctg gcactctgca tttgtaatga 180
 gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtcccc 240
 catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaagaat 300
 c 301

<210> 263
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 263
 tttagcttgt ggtaaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg 60
 aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg 120
 ttcttagtat tatttatggt aaataggctc ttaccacttg caaataactg gccacatcat 180
 taatgactga cttcccagta aggctctcta aggggtaagt angaggatcc acaggatttg 240
 agatgctaag gccccagaga tcgtttgatc caaccctctt attttcagag gggaaaatgg 300
 g 301

<210> 264
<211> 301
<212> DNA
<213> Homo sapien

<400> 264
 aaagacgtta aaccactcta ctaccacttg tggaactctc aaagggtaaa tgacaaaacc 60

aatgaatgac	tctaaaaaca	atattttacat	ttaatgggtt	gtagacaata	aaaaaacaag	120
gtggatagat	ctagaattgt	aacattttta	gaaaaccata	scatttgaca	gatgagaaag	180
ctcaattata	gatgcaaagt	tataactaaa	ctactatagt	agtaaagaaa	tacatttcac	240
acccttcata	taaattcact	atcttggctt	gaggcactcc	ataaaatgta	tcacgtgcat	300
a						301

<210> 265

<211> 301

<212> DNA

<213> Homo sapien

<400> 265

tgcccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	tcattctttgt	60
cttcttgtga	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctcta	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggaggga	180
ttttcagttt	gtcaacatgt	tctctaacaa	cacttgccca	tttctgtaaa	gaatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266

<211> 301

<212> DNA

<213> Homo sapien

<400> 266

taccgtctgc	ccttcctccc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actcttttct	ctacccacag	gcttgctatg	agcaagagac	acaacctcct	120
ctcttctgtg	ttccagcttc	ttttcctgtt	cttcccaccc	cttaagttct	attcctgggg	180
atagagacac	caatacccat	aacctctctc	ctaagcctcc	ttataaccca	gggtgcacag	240
cacagactcc	tgacaactgg	taaggccaat	gaactgggag	ctcacagctg	gctgtgcctg	300
a						301

<210> 267

<211> 301

<212> DNA

<213> Homo sapien

<400> 267

aaagagcaca	ggccagctca	gcctgccctg	gccatctaga	ctcagcctgg	ctccatgggg	60
gttctcagtg	ctgagtcctat	ccaggaaaag	ctcacctaga	ccttctgagg	ctgaatcttc	120
atcctcacag	gcagcttctg	agagcctgat	attcctagcc	ttgatgggtc	ggagtaaagc	180
ctcattctga	ttcctctcct	tcttttcttt	caagttggct	ttcctcacat	ccctctgttc	240
aattcgcttc	agcttgtctg	ctttagccct	catttccaga	agcttcttct	ctttggcatc	300
t						301

<210> 268

<211> 301

<212> DNA

<213> Homo sapien

<400> 268

aatgtctcac	tcaactactt	cccagcctac	cgtggcctaa	ttctgggagt	tttcttctta	60
gatcttggga	gagctgggtc	ttctaaggag	aaggaggaag	gacagatgta	actttggatc	120
tcgaagagga	agtctaattg	aagtaattag	tcaacgggtc	ttgttttagac	tcttggaata	180
tgctgggtgg	ctcagtgagc	ccttttggag	aaagcaagta	ttattcttaa	ggagtaacca	240
cttcccatgg	ttctactttc	taccatcatc	aattgtatat	tatgtattct	ttggagaact	300
a						301

<210> 269

<211> 301

<212> DNA

<213> Homo sapien

<400> 269

taacaatata	cactagctat	ctttttaact	gtccatcatt	agcaccaatg	aagattcaat	60
aaaattacct	ttattcacac	atctcaaaac	aattctgcaa	attcttagtg	aagtttaact	120
atagtcacag	accttaaata	ttcacattgt	tttctatgtc	tactgaaaat	aagttcacta	180
cttttctgga	tattctttac	aaaatcttat	taaaattcct	ggtattatca	cccccaatta	240
tacagtagca	caaccacctt	atgtagtttt	tacatgatag	ctctgtagaa	gtttcacatc	300
t						301

<210> 270

<211> 301

<212> DNA

<213> Homo sapien

<400> 270

cattgaagag	cttttgcgaa	acatcagaac	acaagtgcct	ataaaattaa	ttaagcctta	60
cacaagaata	catattcctt	ttattttctaa	ggagttaaac	atagatgtag	ctgatgtgga	120
gagcttgctg	gtgcagtgca	tattggataa	cactattcat	ggccgaattg	atcaagtcaa	180
ccaactcctt	gaactggatc	atcagaagaa	gggtggtgca	cgatatactg	cactagataa	240
tggaccaacc	aactaaattc	tctcaccagg	ctgtatcagt	aaactggctt	aacagaaaac	300
a						301

<210> 271

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 271

aaaaggttct	cataagatta	acaatttaaa	taaatatttg	atagaacatt	ctttctcatt	60
tttatagctc	atcttttagg	ttgatattca	gttcatgctt	cccttgctgt	tcttgatcca	120
gaattgcaat	cacttcatca	gcctgtattc	gctccaattc	tctataaagt	gggtccaagg	180
tgaaccacag	agccacagca	cacctctttc	ccttggtgac	tgccttcacc	ccatganggt	240
tctctctctc	agatganaac	tgatcatgcg	cccacatttt	gggttttata	gaagcagtca	300
c						301

<210> 272

<211> 301

<212> DNA

<213> Homo sapien

<400> 272

taaattgcta	agccacagat	aacaccaatc	aaatggaaca	aatcactgtc	ttcaaagtgc	60
ttatcagaaa	accaaagtag	cctggaatct	tcataatacc	taaacatgcc	gtatttagga	120
tccaataatt	ccctcatgat	gagcaagaaa	aattctttgc	gcaccctcc	tgcatccaca	180
gcatcttctc	caacaaatat	aaccttgagt	ggcttcttgt	aatctatgtt	ctttgttttc	240
ctaaggactt	ccattgcata	tectacaata	ttttctctac	gcaccactag	aattaagcag	300
g						301

<210> 273

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 273

acatgtgtgt	atgtgtatct	ttgggaaaaan	aanaagacat	cttgtttayt	atTTTTTTgg	60
agagangctg	ggacatggat	aatcacwtaa	tttgctayta	tyactttaat	ctgactygaa	120
gaaccgtcta	aaaataaaaat	ttaccatgtc	dtatatcct	tatagtatgc	ttatttcacc	180
ttytctctgt	ccagagagag	tatcagtgac	ananatttma	gggtgaamac	atgmattggt	240
gggacttnty	tttacngagm	accctgcccc	sgcgccctcg	makngantt	ccgcsananc	300
t						301

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 274

cttatatact	ctttctcaga	ggcaaaagag	gagatgggta	atgtagacaa	ttctttgagg	60
aacagtaaat	gattattaga	gagaangaat	ggaccaagga	gacagaaatt	aacttgtaaa	120
tgattctctt	tggaatctga	atgagatcaa	gaggccagct	ttagcttggtg	gaaaagtcca	180
tctaggtatg	gttgcaattct	cgtcttcttt	tctgcagtag	ataatgaggt	aaccgaaggc	240
aattgtgctt	cttttgataa	gaagctttct	tggtcatatc	aggaaattcc	aganaaaagtc	300
c						301

<210> 275

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 275

tcggtgtcag	cagcacgtgg	cattgaacat	tgcaatgtgg	agcccaaacc	acagaaaatg	60
gggtgaaatt	ggccaacttt	ctattaactt	atgttggcaa	ttttgccacc	aacagtaagc	120
tggcccttct	aataaaaagaa	aattgaaagg	tttctcacta	aacggaatta	agtagtggag	180
tcaagagact	cccaggcctc	agcgtacctg	cccgggcggc	cgctcgaagc	cgaattctgc	240
agatatccat	cacactggcg	gncgctcgan	catgcatcta	gaaggnccaa	ttcgccctat	300
a						301

<210> 276

<211> 301

<212> DNA

<213> Homo sapien

<400> 276

tgtacacata	ctcaataaat	aaatgactgc	attgtggtat	tattactata	ctgattatat	60
ttatcatgtg	acttctaatt	agaaaatgta	tccaaaagca	aaacagcaga	tatacaaaat	120
taaagagaca	gaagatagac	attaacagat	aaggcaactt	atacattgag	aatccaaatc	180
caatacattt	aaacatttgg	gaaatgaggg	ggacaaatgg	aagccagatc	aaatttgtgt	240
aaaactattc	agtatgtttc	cettgtctca	tgtctgagaa	ggctctcctt	caatggggat	300
g						301

<210> 277

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 277
 tttgttgatg tcagtatttt attacttgcg ttatgagtgc tcacctggga aattctaaag 60
 atacagagga cttggaggaa gcagagcaac tgaatttaat ttaaaagaag gaaaacattg 120
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccc ccctcgctct 180
 caccatagtg gggagactaa agtggccacg gatttgcctt anggtgtgcag tgcgttctga 240
 gttcncgtgc gattacatct gaccagtctc ctttttccga agtccttccg ttcaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 278
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60
 aacatatcaa atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgtca 120
 cagtctctac tgttattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacaggttt 240
 tatgtgttct tcgtaacttt atggantagg tactcggccg cgaacacgct aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 279
 aaagcaggaa tgacaaagct tgcttttctg gtatgttcta ggtgtattgt gacttttact 60
 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcacaaagc 120
 ttagaccttt accttccagc caccacacag tgcttgatat ttcagagtca gtcattggtt 180
 atacatgtgt agttccaaag cacataagct agaanaanaa atatttctag ggagcactac 240
 catctgtttt cacatgaaat gccacacaca tagaactcca acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtactggag ttttctccc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggt gtggaaccaa attgtggtca atggaaatag gagaatatgg ttctcactct 120
 tgagaaaaaa acctaagatt agcccaggta gttgcctgta acttcagttt ttctgcctgg 180
 gtttgatata gtttaggggt ggggttagat taagatctaa attacatcag gacaaagaga 240
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300
 t 301

86

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281
 aggtacaaga aggggaatgg gaaagagctg ctgctgtggc attgttcaac ttggatattc 60
 gccgagcaat ccaaatcctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120
 atgtggtagc aatggcttta tcgggttata cggatgagaa gaactccctt tggagagaaa 180
 tgtgtagcac actgcgatta cagctaaata acccgatttt gtgtgtcatg tttgcatttc 240
 tgacaagtga aacaggatct tacgatggag ttttztatga aaacaaagtt gcagtacctc 300
 g 301

<210> 282
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 282
 cagggtactac agaattaaaa tactgacaag caagtagttt cttggcgtgc acgaattgca 60
 tccagaaccc aaaaattaaag aaattcaaaa agacattttg tgggcacctg ctacacagaa 120
 agcgcagaag caaagcccgag gcagaacccat gctaaccctta cagctcagcc tgcacagaag 180
 cgcagaagca aagcccaggc agaaccatgc taaccttaca gctcagcctg cacagaagcg 240
 cagaagcaaa gcccaggcag aacatgctaa ccttacagct cagcctgcac agaagcacag 300
 a 301

<210> 283
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 283
 atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaaag gatgcaaaaag 60
 cactttgagg gctttataat aatatgctgc ttgaaaaaaa aaatgtgtag ttgatactca 120
 gtgcatctcc agacatagta aggggttgct ctgaccaatc aggtgatcat tttttctatc 180
 acttcccagg ttttatgcaa aaattttgtt aaattctata atggtgatat gcatctttta 240
 ggaaacatat acatttttaa aaatctattt tatgtaagaa ctgacagacg aatttgcctt 300
 g 301

<210> 284
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 284
 cagggtacaaa acgctattaa gtggcttaga atttgaacat ttgtggtcct tatttacttt 60
 gcttcgtgtg tgggcaaaagc aacatcttcc ctaaataatat attaccaaga aaagcaagaa 120
 gcagattagg tttttgacaa aacaaacagg ccaaaagggg gctgacctgg agcagagcat 180
 ggtgagaggc aaggcatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240
 actggagtaa aagaaaacaa agttcattga tgtcgaagga tatatacagt gttagaaatt 300
 a 301

<210> 285
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 285
 acatcaccat gatcggtacc cccacccatt atacgttgta tgtttacata aatactcttc 60
 aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcatccc aatctctaac 120
 caggaaagca aatgctattt acagacctgc aagccctccc tcaaacnaaa ctatttctgg 180
 attaaatatg tctgacttct tttgaggtca cacgactagg caaatgctat ttacgatctg 240
 caaaagctgt ttgaagagtc aaagccccca tgtgaacacg atttctggac cctgtaacag 300
 t 301

<210> 286
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 286
 taccactgca ttccagcctg ggtgacagag tgagactccg tctccaaaaa aaactttgct 60
 tgtatattat ttttgcctta cagtggatca ttctagtagg aaaggacagt aagatttttt 120
 atcaaaatgt gtcatgccag taagagatgt tatattcttt tctcatttct tccccacca 180
 aaaataagct accatatagc ttataagtct caaatttttg ccttttacta aaatgtgatt 240
 gtttctgttc attgtgtatg cttcatcacc tatattaggc aaattccatt ttttcccttg 300
 t 301

<210> 287
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 287
 tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgttggg 60
 cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaaatatg 120
 aaatgatatt gttatgaacg cacagttagg gcagcagggc cagaatcctg accctctgcc 180
 ccgtggttat ctctcctcca gcttggctgc ctcagtgtat cacagtattc cattttgttt 240
 gttgcatgtc ttgtgaagcc atcaagattt tctcgtctgt tttcctctca ttggtaatgc 300
 t 301

<210> 288
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 288
 gtacacctaa ctgcaaggac agctgaggaa tgtaatgggc agccgctttt aaagaagtag 60
 agtcaatagg aagacaaatt ccagttccag ctcagtctgg gtatctgcaa agctgcaaaa 120
 gatcttttaa gacaatttca agagaatatt tccttaaagt tggcaatttg gagatcatat 180
 aaaagcatct gcttttgtga tttaatttag ctcactctgg cactggaaga atccaaacag 240
 tctgccttaa ttttgatga atgcatgatg gaaattcaat aatttagaaa gttaaaaaaa 300
 a 301

<210> 289
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 289
 ggtacactgt ttccatgtta tgtttctaca cattgctacc tcagtgtctc tggaaactta 60
 gcttttgatg tctccaagta gtccaccttc atttaactct ttgaaactgt atcatctttg 120
 ccaagtaaga gtggtggcct atttcagctg ctttgacaaa atgactggct cctgacttaa 180

cgttctataa atgaatgtgc tgaagcaaag tgcccatggt ggcggcgaan aagagaaaga 240
 tgtgttttgt tttggactct ctgtggtccc ttccaatgct gtgggtttcc aaccagnnga 300
 a 301

<210> 290
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 290
 acactgagct cttcttgata aatatacaga atgcttggca tataacaagat tctatactac 60
 tgactgatct gttcatttct ctacagctc ttacccccaa aagcttttcc accctaagtg 120
 ttctgacctc cttttctaata cacagtaggg atagaggcag anccacctac aatgaacatg 180
 gagttctatc aagaggcaga aacagcacag aatcccagtt ttaccattcg ctagcagtgc 240
 tgccttgaac aaaaacattt ctccatgtct cattttcttc atgcctcaag taacagtga 300
 a 301

<210> 291
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 291
 caggtaccaa tttcttctat cctagaaaca tttcatttta tgttggtgaa acataacaac 60
 tatatcagct agattttttt tctatgcttt acctgctatg gaaaatttga cacattctgc 120
 tttactcttt tgtttatagg tgaatcacaa aatgtatttt tatgtattct gtagttcaat 180
 agccatggct gtttacttca ttttaatttat ttagcataaa gacattatga aaaggcctaa 240
 acatgagctt cacttcccc aactaactaatt agcatctggt atttcttaac cgtaatgcct 300
 a 301

<210> 292
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 292
 accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc 60
 tgtatttaaat aattttttaag tttaaaagat aaaataccat cattttaaat gttgggtattc 120
 aaaaccaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg 180
 ggaaatatag tasttyatga atgttnatta aattccagtt ataatagtgg ctacacactc 240
 tcactacaca cacagacccc acagtcctat atgccacaaa cacatttcca taacttgaaa 300
 a 301

<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccaagt gctggtgcc aacctgttacc tgttctcact gaaaagtctg gctaattgctc 60
 ttgtgtagtc acttctgatt ctgacaatca atcaatcaat ggcctagagc actgactgtt 120
 aacacaaacg tcactagcaa agtagcaaca gctttaagtc taaatacaaa gctgttctgt 180

gtgagaattt tttaaaaggc tacttgtata ataacccttg tcatttttaa tgtacctcgg 240
 ccgcgaccac gctaagccga attctgcaga tatccatcac actggcggcc gctcgagcat 300
 g 301

<210> 294
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 294
 tgacccataa caatatacac tagctatctt ttttaactgtc catcattagc accaatgaag 60
 attcaataaa attaccttta ttcacacatc tcaaaaacaat tctgcaaatt cttagtgaag 120
 ttttaactata gtcacaganc tttaaatttc acattgtttt ctatgtctac tgaaaataag 180
 ttcactactt ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc 240
 cccaattata cagtagcaca accaccttat gtagttttta catgatagct ctgtagaggt 300
 t 301

<210> 295
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 295
 gtactctttc tctcccctcc tctgaattta attctttcaa cttgcaattt gcaaggatta 60
 cacatttcac tgtgatgtat attgtgttgc aaaaaaaaaa gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattaac ccatctctga 180
 actggtagaa aaacrtctga agagctagtc tatcagcatc tgacaggtga attggatggt 240
 tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataaat tagtttgggt 300
 tctct 305

<210> 296
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 296
 aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct 60
 cacctagtag taaactaaaa ataaactgaa actttatgga atctgaagtt attttccttg 120
 attaaataga attaataaac caatatgagg aaacatgaaa ccatgcaatc tactatcaac 180
 tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt 240
 tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg 300
 c 301

<210> 297
 <211> 300
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(300)
 <223> n = A,T,C or G

<400> 297
 actgagtttt aactggacgc caagcaggca aggctggaag gttttgctct ctttgtgcta 60
 aaggttttga aaaccttgaa ggagaatcat tttgacaaga agtacttaag agtctagaga 120
 acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt 180

90

tccatcattg	ggagtgcact	ggccatccct	caaaatttgt	ctgggctggc	ctgagtggtc	240
accgcacctc	ggccgcgacc	acgctaagcc	gaattctgca	gatatccatc	acactggcgg	300

<210> 298
 <211> 301
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 298						
tatgggggttt	gtcacccaaa	agctgatgct	gagaaaggcc	tccctggggc	ccctcccgcg	60
ggcatctgag	agacctgggtg	ttccagtgtt	tctggaaatg	ggccccagtg	ccgccggctg	120
tgaagctctc	agatcaatca	cgggaagggc	ctggcggtgg	tggccacctg	gaaccaccct	180
gtcctgtctg	tttacatttc	actaycaggt	tttctctggg	cattacnatt	tggtccccta	240
caacagtgac	ctgtgcattc	tgctgtggcc	tgctgtgtct	gcaggtggct	ctcagcgagg	300
t						301

<210> 299
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 299						
gttttgagac	ggagtttcac	tcttgttgcc	cagactggac	tgcaatggca	gggtctctgc	60
tcaactgcacc	ctctgcctcc	caggttcgag	caattctcct	gcctcagcct	cccaggtagc	120
tgggattgca	ggctcacgcc	accataccca	gctaattttt	ttgtattttt	agtagagacg	180
gagtttcgcc	atgttgGCCA	gctggtctca	aactcctgac	ctcaagcgac	ctgcctgcct	240
cggcctccca	aagtgtctgga	attataggca	tgagtcaaca	cgcccagcct	aaagatatatt	300
t						301

<210> 300
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 300						
attcagtttt	atttgctgcc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggttct	cagcctaattg	agtttcaacta	cctgccagtc	tcaaaactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttggtac	240
tataaagcct	gcctctaaca	gtccttgctt	cttcacacca	atcccagagc	catcccccat	300
g						301

<210> 301
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 301						
ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atgtgtcttc	ttcagtctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaagggc	atgaataatt	aaaagttggt	120
gggaactcac	aaagaccctc	agagctgaga	caccacaac	agtgggagct	cacaaagacc	180
ctcagagctg	agacaccac	aacagtggga	gctcaciaag	accctcagag	ctgagacacc	240
cacaacagca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcaatgt	ccagaagtgt	300
t						301

<210> 302
 <211> 301

<212> DNA

<213> Homo sapien

<400> 302

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aggtagacat ttagcttggt gtaaatgact cacaaaactg attttaaaat caagttaatg      60
tgaattttga aaattactac ttaatcctaa ttcacaataa caatggcatt aaggtttgac      120
ttgagttggt tcttagtatt atttatggta aataggctct taccacttgc aaataactgg      180
ccacatcatt aatgactgac ttcccagtaa ggctctctaa ggggtaagta ggaggatcca      240
caggatttga gatgctaagg ccccagagat cgtttgatcc aaccctctta ttttcagagg      300
g                                                                                   301

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<210> 303

<211> 301

<212> DNA

<213> Homo sapien

<400> 303

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aggtagcaac tgtggaaata ggtagaggat cattttttct ttccatatca actaagttgt      60
atattgtttt ttgacagttt aacacatctt cttctgtcag agattctttc acaatagcac      120
tggctaattg aactaccgct tgcattgtaa aaatgggtgt ttgtgaaatg atcataggcc      180
agtaacgggt atgtttttct aactgatctt ttgctcgttc caaagggacc tcaagacttc      240
catcgatttt atatctgggg tctagaaaag gagttaatct gttttccctc ataaattcac      300
c                                                                                   301

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<210> 304

<211> 301

<212> DNA

<213> Homo sapien

<400> 304

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acatggatgt tattttgcag actgtcaacc tgaatttgta tttgcttgac attgcctaata      60
tattagtttc agtttcagct taccactttt ttgtctgcaa catgcaraas agacagtgcc      120
cttttttagtg tatcatatca ggaatcatct cacattgggt tgtgccatta ctgggtgcagt      180
gactttcagc cacttgggta aggtggagtt ggccatatgt ctccactgca aaattactga      240
ttttcctttt gtaattaata agtgtgtgtg tgaagattct ttgagatgag gtatatatct      300
c                                                                                   301

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<210> 305

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 305

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gangtacagc gtggtcaagg taacaagaag aaaaaaatgt gagtggcatc ctgggatgag      60
cagggggaca gacctggaca gacacgttgt catttgctgc tgtgggtagg aaaatgggag      120
taaaggagga gaaacagata caaaatctcc aactcagtat taaggatttc tcatgcctag      180
aatattggta gaaacaagaa tacattcata tggcaataaa ctaaccatgg tggaacaaaa      240
ttctgggatt taagttggat accaangaaa ttgtattaaa agagctgttc atggaataag      300
a                                                                                   301

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<210> 306

<211> 8

<212> PRT

<213> Homo sapien

<400> 306

Val L u Gly Trp Val Ala Glu Leu

1

5

<210> 307
 <211> 637
 <212> DNA
 <213> Homo sapien

<400> 307

acagggratg	aagggaag	gagaggatga	ggaagcccc	ctggggattt	ggtttggtcc	60
ttgtgatcag	gtggtctatg	gggcttatcc	ctacaaagaa	gaatccagaa	ataggggcac	120
attgaggaat	gatacttgag	cccaaagagc	attcaatcat	tgttttattt	gccttmtttt	180
cacaccattg	gtgagggagg	gattaccacc	ctgggggttat	gaagatggtt	gaacacccca	240
cacatagcac	cggagatatg	agatcaacag	tttcttagcc	atagagattc	acagcccaga	300
gcaggaggac	gcttgcacac	catgcaggat	gacatggggg	atgcgctcgg	gattggtgtg	360
aagaagcaag	gactgttaga	ggcaggcttt	atagtaacaa	gacggtgggg	caaactctga	420
tttccgtggg	ggaatgtcat	ggtcttgctt	tactaagttt	tgagactggc	aggtagtga	480
actcattagg	ctgagaacct	tgtggaatgc	acttgaccca	sctgatagag	gaagtagcca	540
ggtgggagcc	tttcccagtg	ggtgtgggac	atatctggca	agattttgtg	gcactcctgg	600
ttacagatac	tggggcagca	aataaaactg	aatcttg			637

<210> 308
 <211> 647
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(647)

<223> n = A,T,C or G

<400> 308

acgattttca	ttatcatgta	aatcgggtca	ctcaaggggc	caaccacagc	tgggagccac	60
tgctcagggg	aagggttcata	tgggactttc	tactgcccaa	ggttctatac	aggatataaa	120
ggngcctcac	agtatagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
ccacccctct	gacccttttg	aactcctctg	accctttaga	acaagcctac	ctaatactctg	240
ctagagaaaa	gaccaacaac	ggcctcaaa	gatctcttac	catgaaggtc	tcagctaatt	300
cttgggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgct	360
cattttgtgt	gtggataaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaacaaca	tcaaagtcac	480
tgtatcaatt	gccatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	tttttctcct	gcttctgact	tgataaaagg	ggaccgt		647

<210> 309
 <211> 460
 <212> DNA
 <213> Homo sapien

<400> 309

actttatagt	ttaggctgga	cattggaaaa	aaaaaaaagc	cagaacaaca	tgtgatagat	60
aatatgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gagcacatct	tcagcaagag	ggggaaatac	tcatcatttt	tggccagcag	ttgtttgatc	180
accaaacatc	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaagtccg	240
ggggaattta	ttcctggcaa	ttttaattgg	actccttatg	tgagagcagc	ggctaccag	300
ctggggtggg	tgagcgaacc	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagagga	atacacaggc	acatgtgtga	tgccaagcgt	gacacctgta	gcactcaaat	420
ttgtcttggt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310
 <211> 539
 <212> DNA
 <213> Homo sapi n

<400> 310
 acgggactta tcaaataaag ataggaaaag aagaaaactc aaatattata ggcagaaatg 60
 ctaaagggtt taaaatatgt caggattgga agaaggcatg gataaagaac aaagttcagt 120
 taggaaagag aaacacagaa ggaagagaca caataaaagt cattatgtat tctgtgagaa 180
 gtcagacagt aagattttgtg ggaaatgggt tggtttgttg tatggtatgt attttagcaa 240
 taatctttat ggcagagaaa gctaaaatcc tttagcttgc gtgaatgatc acttgctgaa 300
 ttcctcaagg taggcatgat gaaggagggt ttagaggaga cacagacaca atgaactgac 360
 ctagatagaa agccttagta tactcagcta ggaatagtga ttctgagggc aactgtgac 420
 atgattatgt cattacatgt atggtagtga tggggatgat aggaaggaag aacttatggc 480
 atattttcac cccacaaaa gtcagttaaa tattgggaca ctaaccatcc aggtcaaga 539

<210> 311
 <211> 526
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(526)
 <223> n = A,T,C or G

<400> 311
 caaatttgag ccaatgacat agaattttac aaatcaagaa gcttattctg gggccatttc 60
 ttttgacgtt ttctctaaac tactaaagag gcattaatga tccataaatt atattatcta 120
 catttacagc atttaaaatg tggtcagcat gaaatattag ctacagggga agctaaataa 180
 attaaacatg gaataaagat ttgtccttaa atataatcta caagaagact ttgatatttg 240
 tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa 300
 aaaatgggga aactctgaag gggttttaagt atcttacctg aagctacaga ctccataacc 360
 tctctttaca gggagctcct gcagccccta cagaaatgag tggctgagat tcttgattgc 420
 acagcaagag cttctcatct aaacccttcc ccttttttagt atctgtgtat caagtataaa 480
 agttctataa actgtagtnt acttatttta atccccaaa cacagt 526

<210> 312
 <211> 500
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(500)
 <223> n = A,T,C or G

<400> 312
 cctctctctc cccaccccct gactctagag aactgggttt tctcccagta ctccagcaat 60
 tcatttctga aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactct 120
 ccatttctct ttcccttcca cctgccagtt ttgctgactc tcaacttgct atgagtgtaa 180
 gcattaagga cattatgctt cttcgattct gaagacaggc cctgctcatg gatgactctg 240
 gcttcttagg aaaatatttt tcttccaaaa tcagtaggaa atctaaactt atcccctctt 300
 tgcagatgtc tagcagcttc agacatttgg ttaagaacct atgggaaaaa aaaaaatcct 360
 tgctaagtgt gtttcctttg taaaccanga ttcttatttg nctggtatag aatatcagct 420
 ctgaacgtgt ggtaaagatt tttgtgtttg aatataggag aaatcagttt gctgaaaagt 480
 tagtcttaat tatctattgg 500

<210> 313
 <211> 718
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(718)

<223> n = A,T,C or G

<400> 313

ggagatttgt	gtggtttgca	gccgagggag	accaggaaga	tctgcatggt	gggaaggacc	60
tgatgataca	gaggtgagaa	ataagaaagg	ctgctgactt	taccatctga	ggccacacat	120
ctgctgaaat	ggagataatt	aacatcacta	gaaacagcaa	gatgacaata	taatgtctaa	180
gtagtgcacat	gtttttgcac	atttccagcc	cttttaaata	tccacacaca	caggaagcac	240
aaaaggaagc	acagagatcc	ctgggagaaa	tgcccggccg	ccatcttggg	tcacgatga	300
gcctcgccct	gtgcctgntc	ccgcttgtga	gggaaggaca	ttagaaaatg	aattgatgtg	360
ttccttaaaag	gatggcagga	aaacagatcc	tggttgggat	atatttttga	acgggattac	420
agatttgaaa	tgaagtcaca	aagtgcagcat	taccaatgag	aggaaaacag	acgagaaaat	480
cttgatgggt	cacaagacat	gcaacaaaaca	aaatggaata	ctgtgatgac	acgagcagcc	540
aactggggag	gagataccac	ggggcagagg	tcaggattct	ggccctgctg	cctaactgtg	600
cgttatacca	atcatttcta	tttctaccct	caaacaagct	gtngaatac	tgacttacgg	660
ttcttntggc	ccacattttc	atnatccacc	ccntcntttt	aannttantic	caaantgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttattttac	attacagaaa	aaacatcaag	acaatgtata	ctattttcaaa	tatatccata	60
cataatcaaaa	tatagctgta	gtacatgttt	tcattgggtg	agattaccac	aatgcaagg	120
caacatgtgt	agatctcttg	tcttattctt	ttgtctataa	tactgtattg	tgtagtccaa	180
gctctcggta	gtccagccac	tgtgaaacat	gctcccttta	gattaaccctc	gtggacgctc	240
ttgttgattt	gctgaactgt	agtgcctgtg	attttgcttc	tgtctgtgaa	ttctgttgct	300
tctggggcat	ttccttgta	tgacagggac	caccacacag	atgacagcaa	tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc	ccgctggcac	tgatgagccg	catcaccatg	gtcaccagca	ccatgaaggc	60
ataggtgatg	atgaggacat	ggaatggggc	cccaaggatg	gtctgtccaa	agaagcgagt	120
gacccccatt	ctgaagatgt	ctggaacctc	taccagcagg	atgatgatag	ccccaatgac	180
agtcaccagc	tccccgacca	gccggatatc	gtccttaggg	gtcatgtagg	cttcctgaag	240
tagcttctgc	tgtaagaggg	tggtgtcccg	ggggctcgtg	cggttattgg	tcctgggctt	300
gagggggcgg	tagatgcagc	acatggtgaa	gcagatgatg	t		341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

agactgggca	agactcttac	gccccacact	gcaatttggt	cttggtgccg	tatccattta	60
tggtgggcctt	tctcgagttt	ctgattataa	acaccactgg	agcgatgtgt	tgactggact	120
cattcagggga	gctctggttg	caatattagt	t			151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg	gatcctaagt	aaatacctga	aacatatatt	ggcatttatc	aatggctcaa	60
atcttcattt	atctctggcc	ttaaccctgg	ctcctgaggc	tgcgccagc	agatcccagg	120
ccagggctct	gttcttgcca	cacctgcttg	a			151

<210> 318
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 318
 actggtggga ggcgctgttt agttggctgt tttcagaggg gtcttttcgga gggacctcct 60
 gctgcaggct ggagtgtctt ttttcctggc gggagaccgc acattccact gctgaggctg 120
 tgggggcggt ttatcaggca gtgataaaca t 151

<210> 319
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 319
 aactagtgga tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta 60
 catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg 120
 taagattggg tttatgtgat tttagtggg a 151

<210> 320
 <211> 150
 <212> DNA
 <213> Homo sapien

<400> 320
 aactagtgga tccactagtc cagtgtgggt gaattccatt gtgttgggggt tctagatcgc 60
 gagcggctgc cctttttttt tttttttttg ggggggaatt tttttttttt aatagttatt 120
 gagtgttcta cagcttacag taaataccat 150

<210> 321
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 321
 agcaactttg tttttcatcc aggttatattt aggccttagga tttcctctca cactgcagtt 60
 tagggtggca ttgtaaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg 120
 tgcctctgag aaatcaaagt cttcatacac t 151

<210> 322
 <211> 151
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(151)
 <223> n = A,T,C or G

<400> 322
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 tttgggcttg gtcagtttgc cacagggctt ggagatgggt acagtcttct ggcattcggc 120
 attgtgcagg gctcgttca nacttcagtt t 151

<210> 323
 <211> 151
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(151)

<223> n = A,T,C or G

<400> 323

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nagactcant	tactaccag	tttgtgggtt	twtgaggagaa	atgtaactgg	acagttagct	120
gttcaatyaa	aaagacactt	ancccatgtg	g			151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(461)

<223> n = A,T,C or G

<400> 324

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agaagtggtc	agctaaagga	atccagggtg	ttgggtggac	tgtaataacc	tttgatgaaa	120
agagttacta	cgaatcccat	cttggttcca	gctatatcac	tgacagcatg	gtagaagact	180
gcgaacctca	cttctagact	ttcacgggtg	gacgaaacgg	gttcagaaac	tgccaggggc	240
ctcatacagg	gatatcaaaa	taccctttgt	gctaccacag	ccctggggaa	tcagggtgact	300
cacacaaatg	caatagttgg	tactgcatt	tttacctgaa	ccaaagctaa	acccggtgtt	360
gccaccatgc	accatggcat	gccagagttc	aacactgttg	ctcttgaaaa	ttgggtctga	420
aaaaacgcac	aagagccctt	gccctgccct	agctgangca	c		461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

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tctataaatg	aatgtgctga	agcaaagtgc	ccatggtggc	ggcgaagaag	agaaagatgt	240
gttttgtttt	ggactctctg	tggtcccttc	caatgctgtg	ggtttccaac	caggggaagg	300
gtcccttttg	cattgccaa	tgccataacc	atgagcacta	cgctaccatg	gttctgcctc	360
ctggccaagc	aggctggttt	gcaagaatga	aatgaatgat			400

<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

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ccagatgggtg	gaggccagcc	tctccgtacg	gcaccagag	tacaacagac	ccttgctcgc	240
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tctgtggcg	aacggcagaa	tgctaccgt	gctgcagtgc	gtgaacgtgt	cggtgggtgc	420
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tcaggaatat	ctgttcccag	cccctcctcc	ctcaggccca	ggagtccagg	ccccagccc	780
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97

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agacccccca gccctctctc cctcagaccc aggagtccag cccctctctc ctcagaccca 900
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aaaaaaaaaa aaaaaa 1215

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<210> 327
 <211> 220
 <212> PRT
 <213> Homo sapien

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<400> 327
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1      5      10      15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
20     25     30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35     40     45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50     55     60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65     70     75     80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85     90     95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100    105    110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115    120    125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130    135    140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145    150    155    160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165    170    175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180    185    190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
195    200    205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210    215    220

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<210> 328
 <211> 234
 <212> DNA
 <213> Homo sapien

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<400> 328
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atccgcagtg ggtgctgtca gccacacact gtttccagaa ctctacacc atcgggctgg 180
gcctgcacag tcttgaggcc gaccaagagc cagggagcca gatggtggag gccca 234

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<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

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<400> 329
Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
1      5      10      15

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Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met Glu Asn Glu Leu
 20 25 30
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
 35 40 45
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
 50 55 60
 Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
 65 70 75

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330
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 gctgcagcca 70

<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331
 Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
 1 5 10 15
 Val Ser Gly Ser Cys Ser
 20

<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

<400> 332
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 gtacatcaac tgttcagctt cctgggaaag tagttgtggt cacaggagct aatacaggta 180
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aaaaaaaaaa	aaaaatccta	aaaacaaaca	aacaaaaaaa	acaattcttc	attcagaaaa	1980
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<210> 333
 <211> 3030
 <212> DNA
 <213> Homo sapien

<400> 333

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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

Pro Ser Phe Pro Thr Leu Leu Ser Arg Arg His Leu Gly Ser Tyr Leu

102

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1           5           10           15
Leu Asp Ser Glu Asn Thr Ser Gly Ala Leu Pro Arg Leu Pro Gln Thr
20          25          30
Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
35          40          45
Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
50          55          60
Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
65          70          75          80
Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
85          90          95
Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
100         105         110
Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
115         120         125
Ser Tyr Pro Tyr Tyr Pro Tyr Leu Tyr Cys Val Gly Ser Trp Ser Pro
130         135         140
Ala Phe Trp
145

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<210> 337
<211> 9
<212> PRT
<213> Homo sapien

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<400> 337
Ala Leu Thr Gly Phe Thr Phe Ser Ala
1           5

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<210> 338
<211> 9
<212> PRT
<213> Homo sapien

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<400> 338
Leu Leu Ala Asn Asp Leu Met Leu Ile
1           5

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<210> 339
<211> 318
<212> PRT
<213> Homo sapien

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<400> 339
Met Val Glu Leu Met Phe Pro Leu Leu Leu Leu Leu Leu Pro Phe Leu
1           5           10           15
Leu Tyr Met Ala Ala Pro Gln Ile Arg Lys Met Leu Ser Ser Gly Val
20          25          30
Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Thr Gly
35          40          45
Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
50          55          60
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
65          70          75          80
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
85          90          95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
100         105         110
Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
115         120         125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met

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130	135	140
His Ile Gly Val Asn	His Leu Gly His Phe Leu	Leu Thr His Leu Leu
145	150	155
Leu Glu Lys Leu Lys	Glu Ser Ala Pro Ser Arg	Ile Val Asn Val Ser
165	170	175
Ser Leu Ala His	Leu Gly Arg Ile His Phe	His Asn Leu Gln Gly
180	185	190
Glu Lys Phe Tyr Asn	Ala Gly Leu Ala Tyr Cys	His Ser Lys Leu Ala
195	200	205
Asn Ile Leu Phe Thr	Gln Glu Leu Ala Arg Arg	Leu Lys Gly Ser Gly
210	215	220
Val Thr Thr Tyr Ser	Val His Pro Gly Thr Val	Gln Ser Glu Leu Val
225	230	235
Arg His Ser Ser Phe	Met Arg Trp Met Trp Trp	Leu Phe Ser Phe Phe
245	250	255
Ile Lys Thr Pro Gln	Gln Gly Ala Gln Thr Ser	Leu His Cys Ala Leu
260	265	270
Thr Glu Gly Leu Glu	Ile Leu Ser Gly Asn His	Phe Ser Asp Cys His
275	280	285
Val Ala Trp Val Ser	Ala Gln Ala Arg Asn Glu	Thr Ile Ala Arg Arg
290	295	300
Leu Trp Asp Val Ser	Cys Asp Leu Leu Gly Leu	Pro Ile Asp
305	310	315

<210> 340
 <211> 483
 <212> DNA
 <213> Homo sapien

<400> 340

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ggttggtggg	gcggtttatc	aggcagtgat	aaacataaga	tgtcatttcc	ttgactccgg	240
ccttcaattt	tctctttggc	tgacgacgga	gtccgtgggt	tcccgatgta	actgaccctt	300
gctccaaaac	tgacatcact	gatgctcttc	tcggggggtg	tgatggcccg	cttggtcacg	360
tgctcaatct	cgccattcga	ctcttgctcc	aaactgtatg	aagacacctg	actgcacgtt	420
ttttctgggc	ttccagaatt	taaagtgaag	ggcagcactc	ctaagctccg	actccgatgc	480
ctg						483

<210> 341
 <211> 344
 <212> DNA
 <213> Homo sapien

<400> 341

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tatttttact	aaccattcta	tttttataga	aatagctgag	agtttctaaa	ccaactctct	120
gctgccttac	aagtattaaa	tattttactt	ctttccataa	agagtagctc	aaaatatgca	180
attaatttaa	taattttctg	tgatgggttt	atctgcagta	atatgtatat	catctattag	240
aattttacta	atgaaaaact	gaagagaaca	aaatttgtaa	ccactagcac	ttaagtactc	300
ctgattctta	acattgtctt	taatgaccac	aagacaacca	acag		344

<210> 342
 <211> 592
 <212> DNA
 <213> Homo sapien

<400> 342

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caatgtggaa	acttcttata	cttggttcca	ttatgaagtt	ggacaattgc	tgctatcaca	120
cctggcaggt	aaaccaatgc	caagagagtg	atggaaacca	ttggcaagac	ttgttgatg	180

104

accaggattg	gaattttata	aaaatattgt	tgatgggaag	ttgctaaagg	gtgaattact	240
tccctcagaa	gagtgtaaa	aaaagtcaga	gatgctataa	tagcagctat	tttaattggc	300
aagtgccact	gtggaaagag	ttcctgtgtg	tgctgaagtt	ctgaagggca	gtcaaattca	360
tcagcatggg	ctgtttggtg	caaatgcaaa	agcacaggtc	tttttagcat	gctggctctt	420
cccgtgtcct	tatgcaaata	atcgtcttct	tctaaatttc	tcctaggctt	cattttccaa	480
agttcttctt	ggtttgtgat	gtcttttctg	ctttccatta	attctataaa	atagtatggc	540
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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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cttgtaactc	tcttttctcc	tttcttcccc	tttctctgcc	cgcctttccc	atcctgctgt	180
agacttcttg	attgtcagtc	tgtgtcacat	ccagtgattg	ttttggtttc	tgttcccttt	240
ctgactgccc	aaggggctca	gaaccccagc	aatcccttcc	tttactacc	ttcttttttg	300
ggggtagttg	gaagggactg	aaattgtggg	gggaaggtag	gaggcacatc	aataaagagg	360
aaaccaccaa	gctgaaaaaa	aa				382

<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

ctgggcctga	agctgtaggg	taaatcagag	gcaggcttct	gagtgatgag	agtcotgaga	60
caataggcca	cataaacttg	gctggatgga	acctcacaat	aaggtggtca	cctcttggtt	120
gtttaggggg	atgccaaagga	taaggccagc	tcagttatat	gaagagaagc	agaacaaaca	180
agtctttcag	agaaatggat	gcaatcagag	tgggatcccc	gtcacatcaa	ggtcacactc	240
caccttcacg	tgccatgaat	gttgccagg	cagaaaaatc	cacccttac	gagtgcggct	300
tcgaccctat	atcccccgcc	cgcgtccctt	tctccataaa	attcttctta	gtagctatta	360
ccttcttatt	atttgatcta	gaaattgccc	tctttttacc	cctaccatga	gccctacaaa	420
caactaacct	gccactaata	gttatgtcat	ccctcttatt	aatcatcatc	ctagccctaa	480
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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

accttttgag	gtctctctca	ccacctccac	agccaccgtc	accgtgggat	gtgctgggat	60
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gcgtggggcca	ggaaatcaca	tcctacactg	cccaggagcc	agacacattt	atggaacaga	180
aaataacata	tcggatttgg	agagacactg	ccaactggct	ggagattaat	ccggacactg	240
gtgccatttc	c					251

<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(282)

<223> n = A,T,C or G

<400> 346

cgcgtctctg	acactgtgat	catgacaggg	gttcaaacag	aaagtgcctg	ggccctcctt	60
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ctaagtcttg	ttaccaaaaa	aaggaaaaag	aaaagatctt	ctcagttaca	aattctggga	120
agggagacta	tacctggctc	ttgccctaag	tgagaggtct	tcctcccgc	acaaaaaat	180
agaaaggctt	tctatttcac	tgccccaggt	agggggaagg	agagtaactt	tgagtctgtg	240
ggtctcattt	cccaaggtgc	cttcaatgct	catnaaaacc	aa		282

<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(201)

<223> n = A,T,C or G

<400> 347

acacacataa	tattataaaa	tgccatctaa	ttggaaggag	ctttctatca	ttgcaagtca	60
taaatataac	ttttaaaaana	ntactancag	cttttaccta	ngctcctaaa	tgcttgtaaa	120
tctgagactg	actggaccca	cccagaccca	gggcaaagat	acatgttacc	atatcatctt	180
tataaagaat	ttttttttgt	c				201

<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

ctgttaatca	caacatttgt	gcatcacttg	tgccaagtga	gaaaatgttc	taaaatcaca	60
agagagaaca	gtgccagaat	gaaactgacc	ctaagtccca	ggtgcccctg	ggcaggcaga	120
aggagacact	cccagcatgg	aggagggttt	atcttttcat	cctaggtcag	gtctacaatg	180
ggggaagggt	ttattataga	actcccaaca	gcccacctca	ctcctgccac	ccacccgatg	240
gcctgcctc	c					251

<210> 349

<211> 251

<212> DNA

<213> Homo sapien

<400> 349

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aacccctgag	gatgccagag	ctatgggtcc	agaacatggg	gtgggtattat	caacagagtt	120
cagaagggtc	tgaactctac	gtgttaccag	agaacataat	gcaattcatg	cattccactt	180
agcaattttg	taaaatacca	gaaacagacc	ccaagagtct	ttcaagatga	ggaaaattca	240
actcctggtt	t					251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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cggctggaat	tgctctgggt	atgatgacag	agaaaatgat	ctcttcctct	gtgacaccaa	180
cacctgtaaa	tttgatgggg	aattgtttaag	aattggagac	actgtgactt	gcgtctgtca	240
gttcaagtgc	aacaatgact	atgtgcctgt	gtgtgggtcc	aattggggaga	gctaccagaa	300
tgagtgttac	ctgcgacagg	ctgcatgcaa	acagcagagt	gagatacttg	tggtgtcaga	360
aggatcatgt	gccacagtc	atgaaggctc	tgagaaaact	agtcaaaagg	agacatccac	420
ctgtgatatt	tgccagtttg	gtgcagaatg	tgacgaagat	gccgaggatg	tctggtgtgt	480
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ttatgataat	gcatgccaaa	tcaaagaagc	atcgtgtcag	aaacaggaga	aaattgaaat	600
catgtctttg	ggtcgatgtc	aagataaacac	aactacaact	actaagtctg	aagatgggca	660

106

ttatgcaaga	acagattatg	cagagaatgc	taacaaatta	gaagaaagt	ccagagaaca	720
ccacatacct	tgtccggaac	attacaatgg	cttctgcatg	catgggaagt	gtgagcattc	780
tatcaatatg	caggagccat	cttgaggtg	tgatgctggt	tatactggac	aacactgtga	840
aaaaaaggac	tacagtgttc	tatacgttgt	tcccggctct	gtacgatttc	agtatgtctt	900
aatcgacg						908

<210> 351
 <211> 472
 <212> DNA
 <213> Homo sapien

<400> 351						
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gtcaaacc	aatgccattg	ttattgtgaa	ttaggattaa	gtagtaattt	tcaaaattca	120
cattaact	attttaaaat	cagwtttgyg	agtcattttac	cacaagctaa	atgtgtacac	180
tatgataaaa	acaaccattg	tattcctgtt	tttctaaaca	gtcctaattt	ctaactgt	240
atatatcctt	cgacatcaat	gaactttgtt	ttcttttact	ccagtaataa	agtaggcaca	300
gatctgtcca	caacaaactt	gccctctcat	gccttgcttc	tcacccatgct	ctgctccagg	360
tcagccccct	tttggcctgt	ttgttttgtc	aaaaacctaa	tctgcttctt	gcttttcttg	420
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<210> 352
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 352						
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caggctgcgt	tccgtcctta	cgatgaagac	cacgatgcag	tttccaaaca	ttgccactac	180
atacatggaa	aggaggggga	agccaaccca	gaaatgggct	ttctctaatac	ctgggataacc	240
aataagcaca	a					251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353						
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gtatccaaaa	gcaaaacagc	agatatacaa	aattaaagag	acagaagata	gacattaaca	180
gataaggcaa	cttatacatt	gacaatccaa	atccaatata	tttaaacatt	tgaggaaatga	240
gggggacaaa	tggaagccar	atcaaatttg	tgtaaaacta	ttcagtatgt	ttcccttgct	300
tcatgtctga	raaggctctc	ccttcaatgg	ggatgacaaa	ctccaaatgc	cacacaaatg	360
ttaacagaat	actagattca	caactggaacg	ggggtaaaga	agaaattatt	ttctataaaa	420
gggctcctaa	tgtagt					436

<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354						
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atcaggggacc	accctttggg	ttgatatttt	gcttaatctg	catcttttga	gtaagatcat	180
ctggcagtag	aagctgttct	ccaggtacat	ttctctagct	catgtacaaa	aacatcctga	240
aggactttgt	caggtgcctt	gctaaaagcc	agatgcgttc	ggcacttcct	tggtctgagg	300
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gtgagtgaag	atagcccat	ataggagcac	ttgggagaga	tcataataaa	gctgactctt	420
gagtacatgc	agtaatgggg	tagatgtgtg	tggtgtgtct	tcattcctgc	aagggtgctt	480

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caatatggaa	ggctctaatt	tgcccatatt	tgaataata	attcagcttt	ttgtaataca	660
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atatcaactg	cataaatgta	aaatgcatgt	gacccaagaa	ggccccaag	tggcagacaa	780
cattgtaccc	atthttccctt	ccaaaatgtg	agcggcgggc	ctgctgcttt	caaggctgtc	840
acacgggatg	tcag					854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

<400> 355						
gaaattaagt	atgagctaaa	ttccctgtta	aaacctctag	gggtgacaga	tctcttcaac	60
caggtcaaag	ctgatctttc	tggaatgtca	ccaaccaagg	gcctatatatt	atcaaaagcc	120
atccacaagt	catacctgga	tgtcagcgaa	gagggcacgg	aggcagcagc	agccactggg	180
gacagcatcg	ctgtaaaaag	cctaccaatg	agagctcagt	tcaaggcgaa	ccaccccttc	240
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gtgactttcc	cacggccaaa	aagctgttca	cacctcacgc	acctctgtgc	ctcagtttgc	420
tcactgtcaa	aataggtcta	ggatttcttc	caaccatttc	atgagttgtg	aagctaaggc	480
tttgtttaatc	atggaaaaag	gtagacttat	gcagaaagcc	tttctggctt	tcttatctgt	540
ggtgtctcat	ttgagtgtctg	tccagtgcac	tgatcaagtc	aatgagtaaa	attttaaggg	600
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gcttaaaagaa	aaccag					676

<210> 356
 <211> 574
 <212> DNA
 <213> Homo sapien

<400> 356						
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caagcttccc	attttagat	ctcagtgcct	atgagtatct	gacacctgtt	cctctcttca	180
gtctcttagg	gaggcttaaa	tctgtctcag	gtgtgctaag	agtgccagcc	caaggkggtc	240
aaaagtccac	aaaactgcag	tctttgctgg	gatagtaagc	caagcagtcg	ctggacagca	300
gagttctttt	cttgggcaac	agataaccag	acaggactct	aatcgtgctc	ttattcaaca	360
ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acagggaagg	420
agatacaagc	tcgtttacat	gtgatagatc	taacaaaggc	atctaccgaa	gtctggtctg	480
gatacagggc	acaggagct	cttaggtcag	cgctgctggt	tggaggacat	tctgagtc	540
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<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

<400> 357						
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aagccacaac	caaracttga	ttttatcaac	aaaaaccctt	aaatataaac	ggsaaaaaac	180
atagatatata	ttattccagt	ttttttaaaa	cttaaaarat	attccattgc	cgaattaara	240
araarataag	tggttatatg	aaagaagggc	attcaagcac	actaaaraaa	cctgaggkaa	300
gcataatctg	tacaaaatta	aactgtcctt	tttggcattt	taacaaattt	gcaacgktct	360
tttttttctt	tttctgtttt	tttttttttt	tac			393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358

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gcatagagta	gggaagctaa	tccagcacag	ggaggtcaca	gagacatccc	taagggaagt	180
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gaaagagagc	tagaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
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tactgaagg	gagtaatgtg	acattacttt	tacttcagg	atggccattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagacct	cttctaaggc	ctgcgatagt	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagtga	aatcagtagg	acttaatgag	600
caagccagag	gttcctccac	aacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

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tgcaacatta	tgcttcatga	ataatatgta	gaaagaaggt	ctgatgaaaa	tgacatcctt	420
aatgtaagat	aactttataa	gaattctggg	tcaaataaaa	ttctttgaag	aaaacatcca	480
aatgtcattg	acttatcaaa	tactatcttg	gcatataacc	tatgaaggca	aaactaaaca	540
aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatttt	gtattctata	acatacgaga	600
ctgtaaagat	gtgacagtgt					620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

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tactcatcat	ttttggccag	cagttgtttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaagt	ccgggggaat	ttattcctgg	caattttaat	240
tggaactcct	atgtgagagc	agcggctacc	cagctggggg	ggtggagcga	acccgtcact	300
agtggacatg	cagtggcaga	gctcctggta	accacctaga	ggaatacaca	ggcacatgtg	360
tgatgccaa	cgtgacacct	gtagcactca	aatttgtctt	gtttttgtct	ttcgggtgtg	420
agattccttag	t					431

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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caatcctgga	ttcaatgtct	gaaacctcgc	tctctgcctg	ctggacttct	gaggccgtca	300
ctgccactct	gtcctccagc	tctgacagct	cctcatctgt	ggtcctgttg	t	351

<210> 362

<211> 463

109

<212> DNA
 <213> Homo sapien

<400> 362
 acttcatcag gccataatgg gtgcctcccg tgagaatcca agcacctttg gactgcgcga 60
 tgtagatgag ccggtgaag atcttgcgca tgcgcggctt cagggcgaag ttcttggcgc 120
 ccccggtcac agaaatgacc aggttggtg ttttcagggt ccagtgtggt gtcagcagct 180
 cgtaaaggat ttccgcgtcc gtgtcgcagg acagacgtat atacttccct ttcttcccca 240
 gtgtctcaaa ctgaatatcc ccaaaggcgt cggtaggaaa ttcttgggtg tgtttcttgt 300
 agttccattt ctacttttg ttgatctggg tgccttccat gtgctggctc tgggcatagc 360
 cacacttgca cacattctcc ctgataagca cgatgggtg gacaggaagg aaggatttca 420
 ttgagcctgc ttatggaaac tggatttgt agcttaata gac 463

<210> 363
 <211> 653
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> (1)...(653)
 <223> n = A,T,C or G

<400> 363
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 tgggaggcac tacgcaagat gggactgcgt cctgggggtga gacatcctct ccttggagat 180
 ctaacgaaac ttctcaccta tgagttgtaa agcagaaata cctgnactac agacgagtgc 240
 ccaacagcaa ccccccgaa gtatgagttc ctctrgggcc tccgttecta ccatgagasc 300
 tagcaagatg naagtgttga gantcattgc agaggttcag aaaagagacc cntcgtgact 360
 ggtctgcaca gttcatggag gctgcagatg aggccttga tgctctggat gctgctgcag 420
 ctgaggccga agcccgggt gaagcaagaa cccgcatggg aattggagat gaggctgtgt 480
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 attttggaaga tcntgggtcc agaattccat ttaccttctg ggccagatac caccagaatg 600
 cccgctccag attccctcag acctttgccg gtcccattat tggtcstggt ggt 653

<210> 364
 <211> 401
 <212> DNA
 <213> Homo sapien

<400> 364
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 aaaacaaggt ggatagatct agaattgtaa cattttaaga aaaccatagc atttgacaga 180
 tgagaaagct caattataga tgcaaagtta taactaaact actatagtag taaagaaata 240
 catttcacac cttcatata aattcactat cttggcttga ggcactccat aaaatgtatc 300
 acgtgcatag taaatcttta ttttgctat ggcgttgac tagaggactt ggactgcaac 360
 aagtggatgc gcggaaaatg aaatcttctt caatagccca g 401

<210> 365
 <211> 356
 <212> DNA
 <213> Homo sapien

<400> 365
 ccagtgtcat atttgggctt aaaatttcaa gaagggcact tcaaattggct ttgcatttgc 60
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 taccagagca tcaagtctct gcagcaggctc attcttgggt aaagaaatga cttccacaaa 180
 ctctccatcc cctggctttg gcttcggcct tgcgttttcg gcatcatctc cgtaaatggt 240
 gactgtcacg atgtgtatag tacagtttga caagcctggg tccatacaga ccgctggaga 300
 acattcggca atgtcccctt tgtagccagt ttcttcttcg agctcccgga gagcag 356

110

<210> 366
 <211> 1851
 <212> DNA
 <213> Homo sapien

<400> 366

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cttccgtggt	cttcattctt	cttcaatagc	cataaatctt	ctagctctgg	ctggctgttt	120
tcacttcctt	taagcctttg	tgactcttcc	tctgatgtca	gctttaagtc	ttgttctgga	180
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caaattacat	gatgatgact	agaaacagca	tactctctgg	ccgtctttcc	agatcttgag	300
aagatacatc	aacattttgc	tcaagtagag	ggctgactat	acttgctgat	ccacaacata	360
cagcaagtat	gagagcagtt	cttccatata	tatccagcgc	atttaaattc	gcttttttct	420
tgattaaaaa	tttcaccact	tgctgttttt	gctcatgtat	accaagtagc	agtgggtgtga	480
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atttatcttc	attgtagaca	gcatagtgtg	gagtgggtatt	tccatactca	tctggaatat	600
ttggatcagt	gccatgttcc	agcaacatta	acgcacattc	atcttctctg	cattgtacgg	660
cctttgtcag	agctgtcctc	ttttgttgt	caaggacatt	aagttgacat	cgtctgtcca	720
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tgtgtttctt	ccccagtgt	gcagcctcaa	gttatcccga	agctgccgca	gcacacggtg	1560
gctcctgaga	aacaccccag	ctcttccggt	ctaacacagg	caagtcaata	aatgtgataa	1620
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tttgacaaaa	tccagcatcc	ttgtatttat	tggtgcagtt	ctcagaggaa	atgcttctaa	1740
cttttcccca	tttagtatta	tgttggctgt	gggcttgta	taggtggttt	ttattacttt	1800
aaggtatgtc	ccttctatgc	ctgttttgct	gagggtttta	attctcgtgc	c	1851

<210> 367
 <211> 668
 <212> DNA
 <213> Homo sapien

<400> 367

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accrtataag	agcagtgctt	tgGCCattaa	tttatcttct	atrttagaca	gcrtagtgya	180
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ctactgcata	cctttatcag	agctgtcctc	ttttgttgt	caaggacatt	aagttgacat	480
cgtctgtcca	gcaggagttt	tactacttct	gaattcccat	tggcagaggc	cagatgtaga	540
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<210> 368
 <211> 1512
 <212> DNA
 <213> Homo sapien

<400> 368

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<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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gcctgtgtggg	gtaaaagtccc	cagaaaggat	ctcatcgtca	tgctcaggga	cackgaygtg	720
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cctatgagac	taggctttga	gaatcaatag	attctttttt	taagaatctt	ttggctagga	1560
gcggtgtctc	acgcctgtaa	ttccagcacc	ttgagagggt	gaggtgggca	gatcacgaga	1620

112

tcaggagatc	gagaccatcc	tggctaacac	ggtgaaaccc	catctctact	aaaaatacaa	1680
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<210> 370
 <211> 2184
 <212> DNA
 <213> Homo sapien

<400> 370

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<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(1855)
 <223> n = A,T,C or G

<400> 371

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<210> 372

<211> 1059

<212> DNA

<213> Homo sapien

<400> 372

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<210> 373

<211> 1155

<212> DNA

<213> Homo sapien

<400> 373

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<210> 374

<211> 2000

<212> DNA

<213> Homo sapien

<400> 374

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<210> 375

<211> 2040
 <212> DNA
 <213> Homo sapien

<400> 375

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<210> 376
 <211> 329
 <212> PRT
 <213> Homo sapien

<400> 376

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Glu	Tyr	Thr	Ile	Val	His	Ala	Ser	Phe	Ile	Ser	Cys	Ile	Ser	Ser	Ser
		35					40					45			
Leu	Asp	Gly	Gln	Gly	Glu	Arg	Gln	Glu	Gln	Arg	Gly	His	Phe	Trp	Arg
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Pro	Gln	Arg	Leu	Leu	Cys	Glu	Asp	Ala	Trp	Glu	Gln	Glu	Val	Gln	Val
65					70					75				80	
Val	Leu	Pro	Leu	Leu	Pro	Leu	Leu	Gln	Gly	Ser	Gly	Lys	Ser	Asn	Val
			85					90						95	
Val	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	Met	Asp	Pro	Arg	Tyr
			100					105					110		
His	Val	His	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp
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116

Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
 130 135 140
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
 145 150 155 160
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
 165 170 175
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
 180 185 190
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
 195 200 205
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
 210 215 220
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
 225 230 235 240
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
 245 250 255
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
 260 265 270
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
 275 280 285
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
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 Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
 305 310 315 320
 Ser Met Leu Phe Leu Val Ile Ile Met
 325

<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(148)
 <223> Xaa = Any Amino Acid

<400> 377
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 35 40 45
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
 50 55 60
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
 65 70 75 80
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
 85 90 95
 Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 110
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
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<210> 378
 <211> 1719
 <212> PRT

<213> Homo sapien

<400> 378

Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys
1				5					10					15	
Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe
			20					25					30		
Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp
		35					40					45			
His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp
	50					55					60				
Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val
65					70					75				80	
Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn
				85					90					95	
Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser
			100					105					110		
Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe
		115					120					125			
Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu	Asp	Lys	Leu	His
	130					135					140				
Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp	Leu	Ile	Val	Met
145					150					155				160	
Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala
				165					170					175	
Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val	Val	Lys	Leu	Leu
			180					185					190		
Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr
	195						200					205			
Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met
	210					215					220				
Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn
225					230					235				240	
Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys
				245					250					255	
Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys	Asn	Lys	His	Gly
			260					265					270		
Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys	Gln	Gln	Val	Val
		275					280					285			
Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr
	290					295					300				
Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly	Ser	Ala	Ser	Ile
305					310					315				320	
Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser	Ser	Gln	Asp	Leu
				325					330					335	
Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser	His	His	His	Val
			340					345					350		
Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln	Met	Leu	Lys	Ile
		355					360					365			
Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Asn	Val	Ser	Arg	Thr	Arg	Asn	Lys
	370					375					380				
Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met	Pro	Ala	Ala	Ser
385					390					395				400	
Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys
				405					410					415	
Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys	Ser	Asn	Val	Gly
			420					425					430		
Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr	Leu	Arg	Ser	Lys
		435					440					445			
Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly
	450					455						460			
Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys

465		470		475		480									
Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His	Cys	Phe	Pro	Cys
			485						490					495	
Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp	Gly	Asp	Tyr	Asp
			500					505					510		
Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg	Gly	Glu	Asp	Leu
		515					520					525			
Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val	Pro	Arg	Lys	Asp
	530						535				540				
Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys	Lys	Asp	Lys	Gln
545					550					555					560
Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly	Asn	Ser	Glu	Val
			565						570					575	
Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn	Val	Leu	Asp	Asn
			580					585					590		
Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys	Gln	Glu	Asp	Glu
		595					600					605			
Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro	Asn	Ile	Pro	Asp
	610					615					620				
Glu	Tyr	Gly	Asn	Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr	Asn	Glu	Asp	Lys
625					630					635					640
Leu	Met	Ala	Lys	Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp	Ile	Glu	Ser	Lys
			645						650					655	
Asn	Lys	His	Gly	Leu	Thr	Pro	Leu	Leu	Leu	Gly	Val	His	Glu	Gln	Lys
			660					665					670		
Gln	Gln	Val	Val	Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala	Asn	Leu	Asn	Ala
		675					680					685			
Leu	Asp	Arg	Tyr	Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala	Val	Cys	Cys	Gly
	690					695					700				
Ser	Ala	Ser	Ile	Val	Ser	Leu	Leu	Leu	Glu	Gln	Asn	Ile	Asp	Val	Ser
705					710					715					720
Ser	Gln	Asp	Leu	Ser	Gly	Gln	Thr	Ala	Arg	Glu	Tyr	Ala	Val	Ser	Ser
			725						730					735	
His	His	His	Val	Ile	Cys	Gln	Leu	Leu	Ser	Asp	Tyr	Lys	Glu	Lys	Gln
			740					745					750		
Met	Leu	Lys	Ile	Ser	Ser	Glu	Asn	Ser	Asn	Pro	Glu	Gln	Asp	Leu	Lys
		755					760					765			
Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Phe	Lys	Gly	Ser	Glu	Asn	Ser
	770					775						780			
Gln	Pro	Glu	Lys	Met	Ser	Gln	Glu	Pro	Glu	Ile	Asn	Lys	Asp	Gly	Asp
785					790					795					800
Arg	Glu	Val	Glu	Glu	Glu	Met	Lys	Lys	His	Glu	Ser	Asn	Asn	Val	Gly
			805						810					815	
Leu	Leu	Glu	Asn	Leu	Thr	Asn	Gly	Val	Thr	Ala	Gly	Asn	Gly	Asp	Asn
			820					825					830		
Gly	Leu	Ile	Pro	Gln	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Asn	Gln	Gln	Phe
		835					840					845			
Pro	Asp	Asn	Glu	Ser	Glu	Glu	Tyr	His	Arg	Ile	Cys	Glu	Leu	Val	Ser
	850					855					860				
Asp	Tyr	Lys	Glu	Lys	Gln	Met	Pro	Lys	Tyr	Ser	Ser	Glu	Asn	Ser	Asn
865					870					875					880
Pro	Glu	Gln	Asp	Leu	Lys	Leu	Thr	Ser	Glu	Glu	Glu	Ser	Gln	Arg	Leu
			885						890					895	
Glu	Gly	Ser	Glu	Asn	Gly	Gln	Pro	Glu	Leu	Glu	Asn	Phe	Met	Ala	Ile
		900						905					910		
Glu	Glu	Met	Lys	Lys	His	Gly	Ser	Thr	His	Val	Gly	Phe	Pro	Glu	Asn
		915					920					925			
Leu	Thr	Asn	Gly	Ala	Thr	Ala	Gly	Asn	Gly	Asp	Asp	Gly	Leu	Ile	Pro
	930					935					940				
Pro	Arg	Lys	Ser	Arg	Thr	Pro	Glu	Ser	Gln	Gln	Phe	Pro	Asp	Thr	Glu
945					950					955					960
Asn	Glu	Glu	Tyr	His	Ser	Asp	Glu	Gln	Asn	Asp	Thr	Gln	Lys	Gln	Phe

															965																970																975
Cys	Glu	Glu	Gln	Asn	Thr	Gly	Ile	Leu	His	Asp	Glu	Ile	Leu	Ile	His																																
															980																985																990
Glu	Glu	Lys	Gln	Ile	Glu	Val	Val	Glu	Lys	Met	Asn	Ser	Glu	Leu	Ser																																
															995																1000																1005
Leu	Ser	Cys	Lys	Lys	Glu	Lys	Asp	Ile	Leu	His	Glu	Asn	Ser	Thr	Leu																																
															1010																1015																1020
Arg	Glu	Glu	Ile	Ala	Met	Leu	Arg	Leu	Glu	Leu	Asp	Thr	Met	Lys	His																																
															1025																1030																1035
Gln	Ser	Gln	Leu	Pro	Arg	Thr	His	Met	Val	Val	Glu	Val	Asp	Ser	Met																																
															1045																1050																1055
Pro	Ala	Ala	Ser	Ser	Val	Lys	Lys	Pro	Phe	Gly	Leu	Arg	Ser	Lys	Met																																
															1060																1065																1070
Gly	Lys	Trp	Cys	Cys	Arg	Cys	Phe	Pro	Cys	Cys	Arg	Glu	Ser	Gly	Lys																																
															1075																1080																1085
Ser	Asn	Val	Gly	Thr	Ser	Gly	Asp	His	Asp	Asp	Ser	Ala	Met	Lys	Thr																																
															1090																1095																1100
Leu	Arg	Ser	Lys	Met	Gly	Lys	Trp	Cys	Arg	His	Cys	Phe	Pro	Cys	Cys																																
															1105																1110																1115
Arg	Gly	Ser	Gly	Lys	Ser	Asn	Val	Gly	Ala	Ser	Gly	Asp	His	Asp	Asp																																
															1125																1130																1135
Ser	Ala	Met	Lys	Thr	Leu	Arg	Asn	Lys	Met	Gly	Lys	Trp	Cys	Cys	His																																
															1140																1145																1150
Cys	Phe	Pro	Cys	Cys	Arg	Gly	Ser	Gly	Lys	Ser	Lys	Val	Gly	Ala	Trp																																
															1155																1160																1165
Gly	Asp	Tyr	Asp	Asp	Ser	Ala	Phe	Met	Glu	Pro	Arg	Tyr	His	Val	Arg																																
															1170																1175																1180
Gly	Glu	Asp	Leu	Asp	Lys	Leu	His	Arg	Ala	Ala	Trp	Trp	Gly	Lys	Val																																
															1185																1190																1195
Pro	Arg	Lys	Asp	Leu	Ile	Val	Met	Leu	Arg	Asp	Thr	Asp	Val	Asn	Lys																																
															1205																1210																1215
Lys	Asp	Lys	Gln	Lys	Arg	Thr	Ala	Leu	His	Leu	Ala	Ser	Ala	Asn	Gly																																
															1220																1225																1230
Asn	Ser	Glu	Val	Val	Lys	Leu	Leu	Leu	Asp	Arg	Arg	Cys	Gln	Leu	Asn																																
															1235																1240																1245
Val	Leu	Asp	Asn	Lys	Lys	Arg	Thr	Ala	Leu	Ile	Lys	Ala	Val	Gln	Cys																																
															1250																1255																1260
Gln	Glu	Asp	Glu	Cys	Ala	Leu	Met	Leu	Leu	Glu	His	Gly	Thr	Asp	Pro																																
															1265																1270																1275
Asn	Ile	Pro	Asp	Glu	Tyr	Gly	Asn	Thr	Thr	Leu	His	Tyr	Ala	Ile	Tyr																																
															1285																1290																1295
Asn	Glu	Asp	Lys	Leu	Met	Ala	Lys	Ala	Leu	Leu	Leu	Tyr	Gly	Ala	Asp																																
															1300																1305																1310
Ile	Glu	Ser	Lys	Asn	Lys	His	Gly	Leu	Thr	Pro	Leu	Leu	Gly	Val																																	
															1315																1320																1325
His	Glu	Gln	Lys	Gln	Gln	Val	Val	Lys	Phe	Leu	Ile	Lys	Lys	Lys	Ala																																
															1330																1335																1340
Asn	Leu	Asn	Ala	Leu	Asp	Arg	Tyr	Gly	Arg	Thr	Ala	Leu	Ile	Leu	Ala																																
															1345																1350																1355
Val	Cys	Cys																																													

120

1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Gly Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175

Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380

<211> 671
 <212> PRT
 <213> Homo sapien

<400> 380
 Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
 1 5 10 15
 Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys Cys Arg Cys Phe
 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu

450		455		460
Ser Glu Glu Tyr His	Arg Ile Cys Glu Leu Val	Ser Asp Tyr Lys Glu		
465	470	475	480	
Lys Gln Met Pro Lys	Tyr Ser Ser Glu Asn Ser	Asn Pro Glu Gln Asp		
	485	490	495	
Leu Lys Leu Thr Ser	Glu Glu Glu Ser Gln Arg	Leu Glu Gly Ser Glu		
	500	505	510	
Asn Gly Gln Pro Glu	Lys Arg Ser Gln Glu Pro	Glu Ile Asn Lys Asp		
	515	520	525	
Gly Asp Arg Glu Leu	Glu Asn Phe Met Ala Ile	Glu Glu Met Lys Lys		
	530	535	540	
His Gly Ser Thr His	Val Gly Phe Pro Glu Asn	Leu Thr Asn Gly Ala		
545	550	555	560	
Thr Ala Gly Asn Gly	Asp Asp Gly Leu Ile Pro	Pro Arg Lys Ser Arg		
	565	570	575	
Thr Pro Glu Ser Gln	Gln Phe Pro Asp Thr Glu	Asn Glu Glu Tyr His		
	580	585	590	
Ser Asp Glu Gln Asn	Asp Thr Gln Lys Gln Phe	Cys Glu Glu Gln Asn		
	595	600	605	
Thr Gly Ile Leu His	Asp Glu Ile Leu Ile His	Glu Glu Lys Gln Ile		
	610	615	620	
Glu Val Val Glu Lys	Met Asn Ser Glu Leu Ser	Leu Ser Cys Lys Lys		
625	630	635	640	
Glu Lys Asp Ile Leu	His Glu Asn Ser Thr Leu	Arg Glu Glu Ile Ala		
	645	650	655	
Met Leu Arg Leu Glu	Leu Asp Thr Met Lys His	Gln Ser Gln Leu		
	660	665	670	

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381	
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ggtaacatgc ttcccctaag ggtatcccaa cccaggggcc tcaccatgac ctctgagggg	120
ccaatatccc aggagaagca ttggggaggt gggggcaggt gaaggacca ggactcacac	180
atcctgggcc tccaaggcag aggagaggggt cctcaagaag gtcaggagga aaatccgtaa	240
caagcagtca g	251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapiens

<400> 382	
cttcctgcag ccccatgct ggtgaggggc acgggcagga acagtggacc caacatggaa	60
atgctggagg gtgtcaggaa gtgatcgggc tctggggcag ggaggagggg tggggagtgt	120
cactgggagg ggacatcctg cagaaggtag gagtgcagaa acacccgctg caggggaggg	180
gagagccctg cggcacctgg gggagcagag ggagcagcac ctgcccaggc ctgggaggag	240
gggcctggag ggcgtgagga ggagcgaggg ggctgcatgg ctggagttag ggatcagggg	300
cagggcgcgga gatggcctca cacagggaag agagggcccc tcctgcaggg cctcacctgg	360
gccacaggag gacactgctt ttcctctgag gagtgcaggag ctgtggatgg tgctggacag	420
aagaaggaca gggcctggct cagggtgtcca gaggtgtcgg ctggcttccc tttgggatca	480
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cctcagtctc tcccctccac tccatcctcc atctggcctc agtgggtcat tctgatcact	660
gaactgacca tacccagccc tgcccacggc cctccatggc tcccgaatgc cctggagagg	720
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gcatacctgca gatggtcccc gccctcatcc tgctgacctg tctgcaggga ctgtcctcct	840
ggaccttgcc ccttgtgcag gagctggacc ctgaagtccc ctcccatag gccaagactg	900
gagccttggt cctctgtgtg gactccctgc ccatattctt gtgggagtgg gttctggaga	960

```

catttctgtc tgttcctgag agctgggaat tgcctcagc catctgcctg cgcggttctg 1020
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gttttcagac cttaaaaaaa aaaaaaaaaa aaaagtgtt 3279

```

<210> 383

<211> 155

<212> PRT

<213> Homo sapiens

<400> 383

```

Met Ala Gly Val Arg Asp Glu Gly Gln Gly Ala Arg Trp Pro His Thr
      5                      10                      15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
      20                      25                      30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
      35                      40                      45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
      50                      55                      60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
      65                      70                      75                      80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala

```

125

				85						90					95
Trp	Ala	Leu	Thr	Gln	Pro	Pro	Ser	Gln	Ser	Pro	Gly	Pro	Gln	Ser	Leu
			100					105					110		
Pro	Ser	Thr	Pro	Ser	Ser	Ile	Trp	Pro	Gln	Trp	Val	Ile	Leu	Ile	Thr
			115				120					125			
Glu	Leu	Thr	Ile	Pro	Ser	Pro	Ala	His	Gly	Pro	Pro	Trp	Leu	Pro	Asn
	130					135					140				
Ala	Leu	Glu	Arg	Gly	His	Leu	Val	Arg	Glu						
145					150										

<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcgccgc ctactactac taaattcgcg gccgcgtcga cgaagaagag 60
 aaagatgtgt tttgttttgg actctctgtg gtcccttcca atgctgtggg tttccaacca 120
 ggggaagggt cccttttgca ttgccaagt ccataaccat gagcactact ctaccatggt 180
 tctgcctcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccagggacct tggaaacagt tggcactgta aggtgcttgc 360
 tccccaagac acatcctaaa aggtgttgta atggtgaaaa cgtcttcctt ctttattgcc 420
 ccttcttatt tatgtgaaca actgtttgc tttttttgta tcttttttaa actgtaaagt 480
 tcaattgtga aaatgaatat catgcaaata aattatgcga ttttttttcc aaagtaaaaa 540
 aaaaaaaaaa aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 ttcccagggt atgtgcgagg gaagacacat ttactatcct tgatgggggt gattccttta 60
 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
 tctcaaagcc atctgctgtc ttcgagtacg gacacatcat cactcctgca ttgttgatca 180
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc aaaagctcga atagacttag 240
 tatcagacag gtccagtttc cgcaccaaca cctgctggtt ccctgtcgtg gtctggatct 300
 ctttggccac caattcccc tttccacat cccggca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcga ccggcccagg cccgcctcgc cgagtcctcc tccccgggtg cctgcccgcga 60
 gccgcgtcgc cccagagggt gggcgcgagg ctgcctctac cggtggcggt ctgtaactca 120
 gcgaccttgg cccgaaggct ctagcaagga cccaccgacc ccagccgcgg cggcgcgagg 180
 gcggactttg cccggtgtgt gggcgggagc ggactgcgtg tccgcggacg ggcagcgaag 240
 atgtagcct tcgctgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387

```

gggccgagtc  gggcaccaag  ggactctttg  cagggttcct  tcctcggatc  atcaaggctg  60
ccccctcctg  tgccatcatg  atcagcacct  atgagttcgg  caaaagcttc  ttccagaggc  120
tgaaccagga  ccggcttctg  ggcggctgaa  aggggcaagg  aggcaaggac  cccgtctctc  180
ccacggatgg  ggagagggca  ggaggagacc  cagccaagtg  ccttttcctc  agcactgagg  240
gagggggctt  gtttcccttc  cctcccggcg  acaagctcca  gggcagggct  gtccctctgg  300
gcggcccagc  acttcctcag  acacaacttc  ttctgtctgc  tccagtcgtg  gggatcatca  360
cttaccacc  cccaagttc  aagaccaa  cttccagctg  cccccttcgt  gtttccctgt  420
gtttgctgta  gctgggcatg  tctccaggaa  ccaagaagcc  ctcagcctgg  tgtagtctcc  480
ctgacccttg  ttaattcctt  aagtctaaag  atgatgaact  tcaaaaaaaaa  aaaaaaa  537

```

<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

```

aggataattt  ttaaaccaat  caaatgaaaa  aaacaaacaa  acaaaaaagg  aaatgtcatg  60
tgagggttaa  ccagtttgca  ttccccta  gtggaaaaag  taagaggact  actcagcact  120
gtttgaagat  tgccctcttct  acagcttctg  agaatttgtt  tatttcactt  gccaaagtga  180
ggacccccct  cccaacatgc  cccagcccac  ccctaagcat  ggtcccttgt  caccaggcaa  240
ccaggaaact  gctacttggt  gacctcacca  gagaccagga  gggtttggtt  agctcacagg  300
acttccccca  ccccagaaga  ttagcatccc  atactagact  cataactcaac  tcaactaggc  360
tcatactcaa  ttgatgggta  ttagacaatt  ccatttcttt  ctgggttatta  taaacagaaa  420
atctttcctc  ttctcattac  cagtaaaggc  tcttggtatc  tttctggttg  aatgatttct  480
atgaacttgt  cttattttta  tgggtgggtt  tttttctggt  520

```

<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

```

cgttgcccc  gtttgacaga  aggaaaggcg  gagcttattc  aaagtctaga  gggagtggag  60
gagttaaggc  tggatttcag  atctgcctgg  ttccagccgc  agtgtgccct  ctgctcccc  120
aacgactttc  caaataatct  caccagcgcc  ttccagctca  ggcgtcctag  aagcgtcttg  180
aagcctatgg  ccagctgtct  ttgtgttccc  tctcaccgc  ctgtcctcac  agctgagact  240
cccaggaaac  cttcagacta  ccttcctctg  ccttcagcaa  ggggcgttgc  ccacattctc  300
tgagggtcag  tggaagaacc  tagactccca  ttgctaagg  tagaaagggg  aagggtgctg  360
gggag  365

```

<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(221)

<223> n = A,T,C or G

<400> 390

```

tgccctctcca  tcctggcccc  gacttctctg  tcaggaaagt  ggggatggac  cccatctgca  60
tacacggntt  ctcatgggtg  tggaacatct  ctgcttgccg  tttcaggaag  gcctctggct  120
gctctangag  tctganenga  ntcgttgccc  cantntgaca  naaggaaagg  cggagcttat  180
tcaaagtcta  gagggagtg  aggagttaag  gctggatttc  a  221

```

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

127

<220>
 <221> misc_feature
 <222> (1)...(325)
 <223> n = A,T,C or G

<400> 391
 tggagcaggt cccgaggcct ccctagagcc tggggccgac tctgtgncga tgcangcttt 60
 ctctcgccg cagcctggag ctgctcctgg catctaccaa caatcagncg aggcgagcag 120
 tagccagggc actgctgcca acagccagtc cnnataccat catgtnaccc ggtgngctct 180
 naanttngat ntccanagcc ctacccatcn tagttctgct ctcccaccgg ntaccagccc 240
 cactgcccag gaatcctaca gccagtaccc tgtcccgacg tctctaccta ccagtacgat 300
 gagacctccg gctactacta tgacc 325

<210> 392
 <211> 277
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(277)
 <223> n = A,T,C or G

<400> 392
 atattgttta actccttcct ttatatcttt taacattttc atggngaaag gttcacatct 60
 agtctcactt nggcnagn gn ctctacttg agtctcttcc cgggctggn ccagtngnaa 120
 antaccanga accgncatgn cttaanaacn ncttggttn tgggttnntc aatgactgca 180
 tgcagtgcac caccctgtcc actacgtgat gctgtaggat taaagtctca cagtgggcgg 240
 ctgaggatac agcgccgcgt cctgtgttgc tggggaa 277

<210> 393
 <211> 566
 <212> DNA
 <213> Homo sapiens

<400> 393
 actagtccag tgtggtggaa ttccgcgccg cgtcgacgga caggtcagct gtctggetca 60
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaaattcag cctaaacgtt 120
 ttgccgggaa cactgcagag acaatgctgt gagtttccaa ccttagccca tctgcgggca 180
 gagaaggtct agtttgcca tcagcattat catgatata ggactgggta cttgggttaag 240
 gaggggtcta ggagatctgt ccctttttaga gacaccttac ttataatgaa gtatttggga 300
 ggggtggttt caaaagtaga aatgtcctgt attccgatga tcatcctgta aacattttat 360
 catttattaa tcatccctgc ctgtgtctat tattatattc atatctctac gctggaaact 420
 ttctgcctca atgtttactg tgcctttgtt tttgctagtt tgtgttggtg aaaaaaaaaa 480
 cattctctgc ctgagtttta atttttgtcc aaagttattt taatctatac aattaaaagc 540
 ttttgcctat caaaaaaaaaa aaaaaa 566

<210> 394
 <211> 384
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(384)
 <223> n = A,T,C or G

<400> 394
 gaacatacat gtcccgccac ctgagctgca gtctgacatc atcgccatca cgggcctcgc 60
 tgcaaattng gaccgggcca aggctggact gctggagcgt gtgaaggagc tacaggccna 120
 gcaggaggac cgggctttta ggagttttta gctgagtgtc actgtagacc ccaaatacca 180
 tcccaagatt atcggggagaa agggggcagc aattacccaa atccggttgg agcatgacgt 240

128

```

gaacatccag tttcctgata aggacgatgg gaaccagccc caggaccaa ttaccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt                                     384

```

```

<210> 395
<211> 399
<212> DNA
<213> Homo sapiens

```

```

<400> 395
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtgc 60
tctgaccttg gactccaaga cctacatcaa cagcctggct atattagatg atgagccagt 120
tatcagaggt ttcattcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcacgtct ttccagtacc ctgagttctc tatagagttg cctaacacag gcagaattgg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgacgt 300
caagttctct ttggaaagcc tgggcatctc ctactacag acctctgacc atgggacggt 360
gcagcctggg gagaccatcc aatcccaaat aaaatgcac                                     399

```

```

<210> 396
<211> 403
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

```

```

<400> 396
tggagttntc agtgcaaaca agccataaag cttcagtagc aaattactgt ctcacagaaa 60
gacattttca acttctgctc cagctgctga taaaacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttagtagat 180
actaaaaaaa gtggatgaat aatctggata tttttcctaa aaagattcct tgaaacacat 240
taggaaaatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gttttagggg gggagtggag gataaaaaga ggaaaaaaag aagagtgaga aaacctattt 360
atcaaagcag gtgctatcac tcaatgttag gccctgctct ttt                                     403

```

```

<210> 397
<211> 100
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

```

```

<400> 397
actagtnacg tgtggtggaa ttcgcggccg cgtcgacctc naanccatct ctatagcaaa 60
tccatccccg ctcttggttg gtnacagaat gactgacaaa                                     100

```

```

<210> 398
<211> 278
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

```

<400> 398

```

129

```

gcggccgcgt cgacagcagt tccgccagcg ctcgcccctg ggtggggatg tgctgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaagag cggacttcac ctggggcgat 120
tcaactactgt gcctcgacca gtgaggagag ctggaccgac agcgaggtgg actcatcatg 180
ctccgggcag cccatccacc tgtggcagtt cctcaaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggctcaacaa ggagaagg 278

```

```

<210> 399
<211> 298
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(298)
<223> n = A,T,C or G

```

```

<400> 399
acggaggtgg aggaagcgnc cctgggatcg anaggatggg tcctgncatt gaccnccctn 60
ggggtgccng catggagcgc atgggcgcgc gcctgggcca cggcatggat cgcgtgggct 120
ccgagatcga gcgcatgggc ctgggtcatgg accgcatggg ctccgtggag cgcatgggct 180
ccggcattga gcgcatgggc ccgctgggcc tcgaccacat ggcctccanc attganccga 240
tgggccagac catggagcgc attggctctg gcgtggagcn catgggtgcc ggcattggg 298

```

```

<210> 400
<211> 548
<212> DNA
<213> Homo sapiens

```

```

<400> 400
acatcaacta ctctctcatt ttaaggatg gcagttccct tcatccccct ttctgcctt 60
gtacatgtac atgtatgaaa ttctcttctc ttaccgaact ctctccacac atcacaagg 120
caaagaacca cacgcttaga agggtaagag ggcaccctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaaggggcc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta ttctatacag gctttgaggc caccatgtc acttatccc 300
tataccctct caccatcccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gttggcccca taattctggg cctttgttgt ttgttttaac tacttgggca tcccaggaag 420
ctttccagtg atctctacc atgggcccc ctcctgggat caagcccctc ccaggccctg 480
tccccagccc ctctgcccc agcccaccog cttgccttgg tgctcagccc tccattggg 540
agcaggtt 548

```

```

<210> 401
<211> 355
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(355)
<223> n = A,T,C or G

```

```

<400> 401
actgtttcca tggtatgttt ctacacattg ctacctcagt gtccttgga acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgcc atggtggcgg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg tttccaacca ggggaagggt 300
cccttttgca ttgccaagtg ccataaccat gagcactact ctaccatggn tctgc 355

```

```

<210> 402
<211> 407
<212> DNA
<213> Homo sapiens

```

130

<220>
 <221> misc_feature
 <222> (1)...(407)
 <223> n = A,T,C or G

<400> 402
 atggggcaag ctggataaag aaccaagacc cactggagta tgctgtcttc aagaaaccca 60
 tctcacatgc ggtggcatac ataggctcaa aataaaggaa tggagaaaaa tatttcaagc 120
 aaatggaaaa cagaaaaaag caggtgttgc actcctactt tctgacaaaa cagactatgc 180
 gaataaagat aaaaaagaga aggacattac aaagggtggc ctgacctttg ataaatctca 240
 ttgcttgata ccaacctggg ctgttttaat tgcccaaacc aaaaggataa tttgctgagg 300
 ttgtggagct tctcccctgc agagagtccc tgatctccca aaatttggtt gagatgtaag 360
 gntgattttg ctgacaactc cttttctgaa gttttactca tttccaa 407

<210> 403
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(303)
 <223> n = A,T,C or G

<400> 403
 cagtatttat agccnaactg aaaagctagt agcaggcaag tctcaaattcc aggcaccaaa 60
 tcctaagcaa gagccatggc atggtgaaaa tgcaaaaggga gagtctggcc aatctacaaa 120
 tagagaacaa gacctactca gtcattgaaca aaaaggcaga caccaacatg gatctcatgg 180
 gggattggat attgtaatta tagagcagga agatgacagt gatcgctatt tggcacaaca 240
 tcttaacaac gaccgaaacc cattattttac ataaacctcc attcggtaac catgttgaaa 300
 gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgttaact tttaaaaatt tagtggattt tgaaaattct tagaggaaaag taaaggaaaa 60
 attgttaatg cactcattta cctttacatg gtgaaagtcc tctcttgatc ctacaaacag 120
 acattttcca ctctgtgttc catagtgtgt aagtgtatca gatgtgttgg gcatgtgaat 180
 ctccaagtgc ctgtgtaata aataaagtat ctttatttca ttcatt 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(334)
 <223> n = A,T,C or G

<400> 405
 gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60
 ttcaatacac ctccccccat agtgaatcag cttccagggg gtccagtccc tctccttact 120
 tcatccccat cccatgccaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180
 ttcccagtgc ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtg 240
 ctggtgcggt tgtgcctcca gcttctgctc agtgcttcat ggacagtgtc cagcccatgt 300
 cactctccac tctctcanng tggatccac ccct 334

131

<210> 406
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 406
 ttctatacct aatgagggag ttganatnac atnnaaccag gaaatgcatg gatctcaang 60
 gaaacaaaca cccaataaac tcggagtggc agactgacaa ctgtgagaca tgcacttgct 120
 acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
 actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407
 <211> 413
 <212> DNA
 <213> Homo sapiens

<400> 407
 gctgacttgc tagtatcatc tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
 gtaaatgcaa taggattaaa aaataaattt gatatcacat ggaaacagac aaaaaatatt 120
 gtacaacatt gcacccagtg tcagattcta cacctggcca ctgaggaagc aagagttaat 180
 cccagaggtc tatgtcctaa tgtgttatgg caaatggatg tcatgcacgt accttcattt 240
 ggaaaattgt catttgtcca tgtgacagtt gatacttatt cacatttcat atgggcaacc 300
 tgccagacag gagaaagtct tcccatgtta aaagacattt attatcttgt tttcctgtca 360
 tgggagttcc agaaaaagtt aaaacagaca atgggccagg ttctgtagta aag 413

<210> 408
 <211> 183
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(183)
 <223> n = A,T,C or G

<400> 408
 ggagctngcc ctcaattcct ccatntctat gttancatat ttaatgtctt ttgnnattaa 60
 tncttaacta gttaatcctt aaagggtan ntaatcctta actagtcctt ccattgtgag 120
 cattatcctt ccagtattcn ccttctnttt tatttactcc ttcttggtta cccatgtact 180
 ntt 183

<210> 409
 <211> 250
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(250)
 <223> n = A,T,C or G

<400> 409
 cccacgcatg ataagctctt tattttctgta agtcctgcta ggaaatcatc aaatctgacg 60
 gtggtttggg ggacctgaac aaacctcctg taattaatca gctttcagtt tctcccccta 120
 gtccctcctt caacaacata ggaggatcct ccccttcttt ctgctcacgg ctttatctag 180
 gcttcccagt gccccagga cagcgtgggc tatgtttaca gcgcntcctt gctggggggg 240
 ggcctatgc 250

<210> 410
 <211> 306
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(306)
 <223> n = A,T,C or G

<400> 410
 ggctggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
 agtcttgcaa tcccatattgc aggatccgtc tgtgcacatg cctctgtaga gaggcagcatt 120
 cccagggacc ttggaaacag ttggcactgt aagggtgctt ctccccaaga cacatcctaa 180
 aagggtgttg aatggtgaaa accgcttcct tctttattgc cccttcttat ttatgtgaac 240
 nactggttgg ctttttttgn atctttttta aactggaaag ttcaattgng aaaatgaata 300
 tcntgc 306

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

<400> 411
 agagatattn cttaggtnaa agttcataga gttcccatga actatatgac tggccacaca 60
 ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
 tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
 aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
 cttctctcaa gngagggcaa a 261

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)
 <223> n = A,T,C or G

<400> 412
 gttcaatggt acctgacatt tctacaacac cccactcacc gatgtattcg ttgccagtg 60
 ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagc aaatactacg 120
 actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
 ctgggagatt tcaactgggta cattgaattc ccaactacc cangcaatta cccagccaac 240
 a 241

<210> 413
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

<400> 413
aactcttaca atccaagtga ctcatctgtg tgcttgaatc ctttccactg tctcatctcc 60
ctcatccaag tttctagtag cttctctttg ttgtgaagga taatcaaact gaacaacaaa 120
aagtttactc tcctcatttg gaacctaaaa actctcttct tcctgggtct gagggctcca 180
agaatccttg aatcanttct cagatcattg gggacaccan atcaggaacc t 231

<210> 414
<211> 234
<212> DNA
<213> Homo sapiens

<400> 414
actgtccatg aagcactgag cagaagctgg aggcacaacg caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaag gagggagggt cttccttttg catgggatgg ggatgaagta aggagaggga 180
ctggaccccc tggaagctga ttcactatgg ggggagggtg attgaagtcc tcca 234

<210> 415
<211> 217
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G

<400> 415
gcataggatt aagactgagt atcttttcta cattctttta acttttctaag gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cacttttctca 120
cacctagcaa tagtagaatt cagtcctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217

<210> 416
<211> 213
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

<400> 416
atgcataatnt aaagganact gcctcgcttt tagaagacat ctggngctgct ctctgcatga 60
ggcacagcag taaagctctt tgattcccag aatcaagaac tctccccttc agactattac 120
cgaatgcaag gtgggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag 213

<210> 417
<211> 303
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

<400> 417
nagttcttcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60

134

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gtgggaaagg ctttactctg agttcaaadc ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagggtggga agagcttcag gagggtattcc cattatcaag 180
ttcatctagt ggtccacaca ggagagaaac cctataaatg tgagatatgt ggggaagggct 240
tcantcaaag ttcgtatctt caaatccatc ngaagggncca cagtatanan aaacctttta 300
agt

```

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<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

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<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

```

```

<400> 418
tttttggcgg tgggtggggca gggacggggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcactacaac ccctgcctcc catgtccaag cgattcttgt 120
gcctcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacat gttggccagg ctgggtctcaa actcctnacc 240
tcagnngtca ggctgggtct aaactcctga cctcaagtga tctgcccacc tcagcctccc 300
aaagtgctan gattacaggc cgtgagcc

```

```

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

```

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<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

```

```

<400> 419
cctcctcaag acggcctgtg gtccgcctcc cggcaaccaa gaagcctgca gtgccatattg 60
acccctgagc catggactgg agcctgaaag gcagcgtaca ccctgctcct gatcttgctg 120
cttggtttcct ctctgtggct ccattcatag cacagttggt gactgaggc ttgtgcaggc 180
cgagcaaggc caagctggct caaagagcaa ccagtcact ctgccacggg gtgccaggca 240
cgggtttctc agccaccaac ctcaactcgt cccgcaaatt gcacatcagt tcttctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtcct ctgctctatc agccatcacg 360
tggcagccac tcnggctgtg tcgacgcgg

```

```

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

```

```

<400> 420
gttcctccta actcctgcc aaaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttgggt tcttggttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgctatg aaaaacctgg caagcccg

```

```

<210> 421
<211> 352
<212> DNA
<213> Homo sapiens

```

<220>
 <221> misc_feature
 <222> (1)...(352)
 <223> n = A,T,C or G

<400> 421
 gctcaaaaat ctttttactg atnggcatgg ctacacaatc attgactatt acggaggcca 60
 gaggagaatg aggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
 ttcactgaca gaacaggtct tttttgggtc cttcttctcc accacnatac attgacagtc 180
 ctcttctttg aagattcttt ggcagttgtc tttgtcataa cccacaggtg tagaaacaag 240
 ggtgcaacat gaaatttctg tttcgtagca agtgcatgtc tcacaagttg gcangtctgc 300
 cactccgagt ttattgggtg tttgtttcct ttgagatcca tgcatttctt gg 352

<210> 422
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 422
 atgccaccat gctggcaatg cagcgggcg tccaaggcct gcatatccag cccaagctgg 60
 cgatgatcga cggcaaccgt tgcccgaagt tgccgatgcc agccgaagcg gtggtcaagg 120
 gcgatagcaa ggtgccggcg atcgcgcgcg cgtcaatcct ggccaaggtc agccgtgatc 180
 gtgaaatggc agctgtcgaa ttgatctacc cgggttatgg catcggcggg cataagggct 240
 atccgacacc ggtgcacctg gaagccttgc agcggctggg gccgacgccg attcaccgac 300
 gcttcttccg ccggtacggc tggcctatga aaattat 337

<210> 423
 <211> 310
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(310)
 <223> n = A,T,C or G

<400> 423
 gctcaaaaat ctttttactg atatggcatg gctacacaat cattgactat tagaggccag 60
 aggagaatga ggcctggcct gggagccctg tgccctacta aagcncatta gattatccat 120
 ttcactgacag aacaggtctt ttttgggtcc ttcttctcca ccacgatata cttgcagtc 180
 tccttcttga agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
 gtgcaacatg aaatttctgt ttcgtagcaa gtgcatgtct cacagttgtc aagtctgccc 300
 tccgagttta 310

<210> 424
 <211> 370
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(370)
 <223> n = A,T,C or G

<400> 424
 gctcaaaaat ctttttactg ataggcatgg ctacacaatc attgactatt agaggccaga 60
 ggagaatgag gcctggcctg ggagccctgt gcctactaga agcacattag attatccatt 120
 cactgacaga acaggtcttt tttgggtcct tcttctccac cagcatatac ttgcagtcct 180
 ccttcttgaa gattcttttg cagttgtctt tgtcataacc cacaggtgta gaaacatcct 240
 ggttgaatct cctggaactc cctcattagg tatgaaatag catgatgcat tgcataaagt 300
 cacgaagggt gcaaagatca caacgctgcc cagganaaca ttcattgtga taagcaggac 360
 tccgtcgacg 370

<210> 425
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 425
 aattgctatn ntttattttg ccactcaaaa taattaccaa aaaaaaaaaa tnttaaataga 60
 taacaacnca acatcaaggn aaananaaca ggaatggntg actntgcata aatnggccga 120
 anattatcca ttatnttaag ggttgacttc aggntacagc acacagacaa acatgcccag 180
 gaggnntntca ggaccgctcg atgtntntng aggagg 216

<210> 426
 <211> 596
 <212> DNA
 <213> Homo sapiens

<400> 426
 cttccagtga ggataaccct gttgccccgg gccgagggttc tccattaggc tctgattgat 60
 tggcagtcag tgatggaagg gtgttctgat cattccgact gcccgaaggg tcgctggcca 120
 gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatggtga 180
 gctgtccttg tatttttgatt aacctaatgg ctttcccagc acgactcgga ttcagctgga 240
 gacatcacgg caacttttaa tgaaatgatt tgaagggccca ttaagaggca cttcccgtta 300
 ttaggcagtt catctgcact gataacttct tggcagctga gctggtcgga gctgtggccc 360
 aaacgcacac ttggcttttg gttttgagat acaactctta atcttttagt catgcttgag 420
 ggtggatggc cttttcagct ttaacccaat ttgcaactgcc ttggaagtgt agccaggaga 480
 atacactcat atactcgtgg gcttagaggc cacagcagat gtcattggtc tactgcctga 540
 gtcccgtggtg tcccatccca ggaccttcca tcggcgagta cctgggagcc cgtgct 596

<210> 427
 <211> 107
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(107)
 <223> n = A,T,C or G

<400> 427
 gaagaattca agtttaggttt attcaaaggg cttacngaga atcctanacc caggncccag 60
 cccgggagca gccttanaga gctcctgttt gactgcccgg ctcagng 107

<210> 428
 <211> 38
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(38)
 <223> n = A,T,C or G

<400> 428
 gaacttcna anaangactt tattcactat ttacatt

38

<210> 429

137

<211> 544
<212> DNA
<213> Homo sapiens

<400> 429
ctttgctgga cggaataaaaa gtggacgcaa gcatgacctc ctgatgaggg cgctgcattt 60
attgaagagc ggctgcagcc ctgcggttca gattaaaatc cgagaattgt atagacgccg 120
atatccacga actccttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
tttgatgggt ggctcatcac ctgtagaacc tgacttgccg gtggctggaa tccactcgtt 240
gccttccact tcagttacac ctcaactcacc atcctctcct gttggttctg tgctgcttca 300
agatactaag cccacatttg agatgcagca gccatctccc ccaattcctc ctgtccatcc 360
tgatgtgcag ttaaaaaatc tgccctttta tgatgtcctt gatgttctca tcaagcccac 420
gagtttagtt caaagcagta ttcagcgatt tcaagagaag ttttttattt ttgctttgac 480
acctacaaca gttagagaga tatgcatatc cagggatatt ttgccagggt gtaggagaga 540
ttat 544

<210> 430
<211> 507
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(507)
<223> n = A,T,C or G

<400> 430
cttatcncaa tggggctccc aaacttggct gtgcagtgga aactccgggg gaattttgaa 60
gaacactgac acccatcttc caccgccaga ctctgattta attgggctgc agtgagaaca 120
gagcatcaat ttaaaaagct gcccagaatg ttntcctggg cagcgttggt atctttgccn 180
ccttcgtgac tttatgcaat gcatcatgct atttcatacc taatgagga gttccaggag 240
attcaaccag gatgtttcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
caagaaggag gactgcaagt atatcgtggg ggagaagaag gacccaaaaa agacctgttc 360
tgtcagtgaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggcct 420
cattctcctc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
ttttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431
<211> 392
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

<400> 431
gaaaattcag aatggataaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
aaacaagaaa gcacttatca ggaggactta caaatggaag tacactctan aaccatcatc 120
tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
aagagatggg aaacaaaatc ccaggagttt tgtgtgtgga gtccctgggt ttccaacaga 240
catcattcca gcattctgag attagggnga ttggggatca ttctggagtt ggaatgttca 300
acaaaagtga tgttgtagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432
<211> 387
<212> DNA
<213> Homo sapiens

<220>

138

<221> misc_feature
 <222> (1)...(387)
 <223> n = A,T,C or G

<400> 432
 ggatccnta cataatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
 aaatgcaagg caacatgtgt agatctcttg tcttattctt ttgtctataa tactgtattg 120
 ngtagtccaa gctctcggna gtccagccac tgnngaaacat gctcccttta gattaacctc 180
 gtggacnctn ttgttgnatt gtctgaactg tagngccctg tattttgctt ctgtctgnga 240
 attctgttgc ttctggggca tticcttgng atgcagagga ccaccacaca gatgacagca 300
 atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
 acaacgtata gaacactgga gtccttt 387

<210> 433
 <211> 281
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(281)
 <223> n = A,T,C or G

<400> 433
 ttcaactagc anagaanact gcttcagggg gtgtaaaatg aaaggcttcc acgcagttat 60
 ctgattaaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tacactatag 120
 caggcnctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
 atcgccgtgg ctattcctcn ttgntattac accagnagag ntctctgtnt gccactgggt 240
 tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434
 <211> 484
 <212> DNA
 <213> Homo sapiens

<400> 434
 ttttaaaata agcatttagt gctcagtcce tactgagtag tctttctctc ccctcctctg 60
 aatttaattg tttcaacttg caatttgcaa ggattacaca tttcactgtg atgtatattg 120
 tgttgcaaaa aaaaaaaagt gtctttgttt aaaattactt ggtttgtgaa tccatcttgc 180
 tttttcccca ttggaactag tcattaaccc atctctgaac tggtagaaaa acatctgaag 240
 agctagtcta tcagcatctg acaggtgaat tggatggttc tcagaaccat ttcaccacaga 300
 cagcctgttt ctatcctgtt taataaatta gtttgggttc tctacatgca taacaaaccc 360
 tgctccaate tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
 tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480
 tttta 484

<210> 435
 <211> 424
 <212> DNA
 <213> Homo sapiens

<400> 435
 ggcgcgtca gagcagggtca ctttctgcct tccacgtcct ctttcaagga agcccatgt 60
 gggtagcttt caatatcgca ggttcttact cctctgcctc tataagctca aaccaccaa 120
 cgatcgggca agtaaaccac ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
 atggcctgt ggggaggggg caagatagat gagggggagc ggcatggtgc ggggtgacct 240
 cttggagaga ggaaaaaggc cacaagaggg gctgccaccg cactaaccgg agatggccct 300
 ggtagagacc tttgggggtc tggaacctct ggactcccca tgctctaact cccacactct 360
 gctatcagaa acttaaaactt gaggattttc tctgtttttc actcgcaata aattcagagc 420
 aaac 424

<210> 436

<211> 667
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(667)
 <223> n = A,T,C or G

<400> 436
 accttgggaa nactctcaca atataaaggg tcgtagactt tactccaaat tccaaaaagg 60
 tcctggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt ataagggtgc 120
 agcctcttct ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaacgaggg 180
 cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcaccggg 240
 atgggctgcc agagtaggat aggattccag atgctgacac cttctggggg aaacaggggt 300
 gccaggtttg tcatagcact catcaaagtc cggccaacgt ctgtgcttcg aatataaacc 360
 tgttcatgtt tataggactc attcaagaat tttctatatc tctttcttat atactctcca 420
 agttcataat gctgctccat gcccagctgg gtgagttggc caaatccttg tggccatgag 480
 gattccttta tggggtcagt gggaaagggt tcaatgggac ttcgggtctcc atgccgaaac 540
 accaaagtca caaacttcaa ctccctgggt agtacacttc ggtctagcca gaaaaaagc 600
 agaaacaaga agccaaggct aaggcttgct gccctgccag gaggaggggt gcagctctca 660
 tgttgag 667

<210> 437
 <211> 693
 <212> DNA
 <213> Homo sapiens

<400> 437
 ctacgtctca accctcattt ttaggtaagg aatcttaagt ccaaagatat taagtgactc 60
 acacagccag gtaaggaaag ctggattggc acactaggac tctaccatac cgggttttgt 120
 taaagctcag gttaggaggc tgataagctt ggaaggaaact tcagacagct ttttcagatc 180
 ataaaagata attcttagcc catgtttctc tccagagcag acctgaaatg acagcacagc 240
 aggtactcct ctattttcac ccctcttgct tctactctct ggcagtcaga cctgtgggag 300
 gccatgggag aaagcagctc tctggatgtt tgtacagatc atggactatt ctctgtggac 360
 catttctcca ggttacccta ggtgtcacta ttgggggggac agccagcatc tttagctttc 420
 atttgagttt ctgtctgtct tcagtagagg aaacttttgc tcttcacact tcacatctga 480
 acacctaact gctgttgctc ctgaggtggg gaaagacaga tatagagctt acagtattta 540
 tcctatttct aggcactgag ggctgtgggg taccttgtgg tgccaaaaca gatcctgttt 600
 taaggacatg ttgcttcaga gatgtctgta actatctggg ggctctgttg gctctttacc 660
 ctgcatcatg tgctctcttg gctgaaaatg acc 693

<210> 438
 <211> 360
 <212> DNA
 <213> Homo sapiens

<400> 438
 ctgcttatca caatgaatgt tctcctgggc agcgttggtga tctttgccac cttcgtgact 60
 ttatgcaatg catcatgcta tttcatacct aatgagggag ttccaggaga ttcaaccagg 120
 atgtttctac acctgtgggt tatgacaaag acaactgcc aagaatcttc aagaaggagg 180
 actgcaagta tatctgggtg agaagaagga cccaaaaaag acctgttctg tcagtgaatg 240
 gataatctaa tgtgcttcta gtaggcacag ggctcccagg ccaggcctca ttctcctctg 300
 gcctctaata gtcaataatt gtgtagccat gcctatcagt aaaaagattt ttgagcaaac 360

<210> 439
 <211> 431
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

140

<222> (1)...(431)

<223> n = A,T,C or G

<400> 439

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gttcctnnta actcctgcca gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tgGCCagggc agcaagcctt agccttggtt tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag t                                     431

```

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

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agagataaag cttaggtcaa agttcataga gttcccatga actatatgac tggccacaca 60
ggatccttttg tatttaagga ttctgagatt ttgcttgagc aggattagat aaggctgttc 120
tttaaatgtc tgaaatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggagaggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaac tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
taaaaatttaa aacctctttg tgtcccttgg tcctgggaaca tttatgttcc ttttaaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaat acatatagca gctcttgaag 480
tatatatatc atagcaaata agtcactctga tgagaacaag cta                                     523

```

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```

gttcctccta actcctgcca gaaacagctc tcctcaacat gagagctgca cccctcctcc 60
tgGCCagggc agcaagcctt agccttggtt tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgt gtttcggcat ggagaccgaa 180
gtcccattga cacctttccc actgacccca taaaggaatc ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attccttgaat gagtcctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgtcga cgcggccgcg 420
aatttagtag                                     430

```

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

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ctaaggaaatt agtagtggtc ccatcacttg tttggagtggt gctatttctaa aagattttga 60
tttcctggaa tgacaattat attttaactt tgggtggggg aagagttata ggaccacagt 120
cttcacttct gatacttgta aattaatctt ttattgcact tgttttgacc attaagctat 180
atgttttagaa atggtcattt tacggaaaaa ttagaaaaat tctgataata gtgcagaata 240
aatgaatttaa tgttttactt aatttatatt gaactgtcaa tgacaaataa aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc                                     362

```

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

141

<220>
 <221> misc_feature
 <222> (1)...(624)
 <223> n = A,T,C or G

<400> 443
 tttttttttt gcaacacaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60
 ttgaaagaat taaattcaga ggaggggaga gaaagagtag tcagtaggga ctgagcacta 120
 aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
 tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
 cccaaaccac agaaaatggg gtgaaattgg ccaactttct attaacttgg cttcctgttt 300
 tataaaatat tgtgaataat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360
 taacgcctac aaaacactta aacatagata acataggtgc aagtactatg tatctggtac 420
 atggtaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgctaata 480
 agtacagaga gagggcactt aaaccaacta agggcctgga gggaagggtt cctggaaaga 540
 ngatgcttgt gctgggtcca aatcttgggtc tactatgacc ttggccaaat tatttaaact 600
 ttgtccctat ctgctaaaca gatc 624

<210> 444
 <211> 425
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(425)
 <223> n = A,T,C or G

<400> 444
 gcacatcatt nntcttgcatt tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
 gaagctttgt ccaggcctgt gtgtgaaccc aatgttttgc ttagaaatag aacaagtaag 120
 ttcattgcta tagcataaca caaaatttgc ataagtgggtg gtcagcaaatt ccttgaatgc 180
 tgcttaatgt gagaggttgg taaaatcctt tgtgcaaacac tctaactccc tgaatgtttt 240
 gctgtgctgg gacctgtgca tgccagacaa ggccaagctg gctgaaagag caaccagcca 300
 cctctgcaat ctgccacctc ctgctggcag gatttgtttt tgcacacctg gaagagccaa 360
 ggaggcacca gggcataagt gagtagactt atggtcgacg cggccgcgaa tttagtagta 420
 gtaga 425

<210> 445
 <211> 414
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(414)
 <223> n = A,T,C or G

<400> 445
 catgtttatg nttttggatt actttgggca cctagtgttt ctaaatcgtc tatcattctt 60
 ttctgttttt caaaagcaga gatggccaga gtctcaacaa actgtatctt caagtctttg 120
 tgaaattctt tgcatgtggc agattatttg atgtagtttc ctttaactag catataaatc 180
 tgggtgtgtt cagataaatg aacagcaaaa tgtggtggaa ttaccatttg gaacattgtg 240
 aatgaaaaat tgtgtctcta gattatgtaa caaataacta tttcctaacc attgatcttt 300
 ggatttttat aatcctactc acaaatagact aggtctctcc tcttgtattt tgaagcagtg 360
 tgggtgctgg attgataaaa aaaaaaaaaa tcgacgcggc cgcgaattta gtag 414

<210> 446
 <211> 631
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(631)
 <223> n = A,T,C or G

<400> 446
 acaaattaga anaaagtgcc agagaacacc acataccttg tccggaacat tacaatggct 60
 tctgcatgca tgggaagtgt gagcattcta tcaatatgca ggagccatct tgcagggtgtg 120
 atgctgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttgttc 180
 ccggtcctgt acgatttcag tatgtcttaa tcgcagctgt gattggaaca attcagattg 240
 ctgtcatctg tgtgggtggtc ctctgcatca caagggccaa actttaggta atagcattgg 300
 actgagattt gtaaactttc caaccttcca ggaaatgccc cagaagcaac agaattcaca 360
 gacagaagca aaatacaggg cactacagtt cagacaatac aacaagagcg tccacgagggt 420
 taatctaaag ggagcatggt tcacagtggc tggactaccg agagcttgga ctacacaata 480
 cagtattata gacaaaagaa taagacaaga gatctacaca tgttgccctg catttgtggt 540
 aatctacacc aatgaaaaca tgtactacag ctatatattga ttatgtatgg atatatttga 600
 aatagtatac attgtcttga tgttttttct g 631

<210> 447
 <211> 585
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(585)
 <223> n = A,T,C or G

<400> 447
 ccttgggaaa antntcacaa tataaagggt cgtagacttt actccaaatt ccaaaaagggt 60
 cctggccatg taatcctgaa agttttccca aggtagctat aaaatcctta taagggtgca 120
 gcctcttctg gaattcctct gatttcaaag tctcactctc aagttcttga aaacgagggc 180
 agttcctgaa aggcagggtat agcaactgat ctacagaaag aggaactgtg tgcaccggga 240
 tgggctgcca gagtaggata ggattccaga tgctgacacc ttctggggga aacagggctg 300
 ccaggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
 gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
 gttcataatg ctgctccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
 attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgccgaaaca 540
 ccaaagtcac aaacttcaac tccttggcta gtacacttcg gtcta 585

<210> 448
 <211> 93
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(93)
 <223> n = A,T,C or G

<400> 448
 tgctcgtggg tcattctgan nnccgaactg acentgccag ccctgccgan gggccnccat 60
 ggctccctag tgccctggag agganggggc tag 93

<210> 449
 <211> 706
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

<222> (1)...(706)

<223> n = A,T,C or G

<400> 449

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ccaagttcat gctntgtgct ggacgctgga caggggggcaa aagcnnttgc tcgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgccgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtccctggaag gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcggggc cgtcccattc gccattcagg ctgcgcaact 240
gttgggaagg gcgatcggtg cgggcctctt cgctattacg ccagctggcg aaagggggat 300
gtgctgcaag gcgattaagt tgggtaacgc caggggtttc ccagtcncga cgttgtaaaa 360
cgacggccag tgaattgaat ttaggtgaac ctatagaaga gctatgacgt cgcatgcacg 420
cgtacgtaag cttggatcct ctagagcggc cgcctactac tactaaattc gcggccgcgt 480
cgacgtggga tccncaactga gagagtggag agtgacatgt gctggacnct gtccatgaag 540
cactgagcag aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aacaggttga acctgggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcatggatga cagagtgaaa ctccatctta aaaaaaaaaa aaaaaa 706

```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

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gagacggagt gtcactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagtttttaa aaggtaaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaacttta caaagggatc ttacagacat gtcgccaata tcaactgcatg 180
agcctaagta taagaacaac ctttggggag aaaccatcat ttgacagtga ggtacaattc 240
caagtcagggt agtgaatgg gtggaattaa actcaaatta atcctgccag ctgaaacgca 300
agagacactg tcagagagtt aaaaagttag ttctatccat gaggtgattc cacagtcttc 360
tcaagtcaac acatctgtga actcacagac caagttctta aaccactgtt caaactctgc 420
tacacatcag aatcacctgg agagctttac aaactcccat tgccgaggggt cgacgcggcc 480
gcgaatttag tag 493

```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(501)

<223> n = A,T,C or G

<400> 451

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gggcgcgtcc cattcgccat tcaggctgcg caactgttgg gaagggcgat cgggtcgggc 60
ctcttcgcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt 120
aacgccaggg ttttcccagt cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
tgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
gcggccgcct actactacta aattcgcggc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggcacia 360
cgcncacagc actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgaatga gctgagatca ggcnctgcn cccagcatg gatgacagag tgaaactcca 480
tcttaaaaaa aaaaaaaaaa a 501

```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(51)

144

<223> n = A,T,C or G

<400> 452

agacggtttc accnttaciaa cnccttttag gatgggnntt ggggagcaag c 51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(317)

<223> n = A,T,C or G

<400> 453

tacatcttgc	tttttcccca	ttggaactag	tcattaaccc	atctctgaac	tggtagaaaa	60
acatctgaag	agctagtcta	tcagcatctg	gcaagtgaat	tggtatgggtc	tcagaaccat	120
ttcacccana	cagcctgttt	ctatcctgtt	taataaatta	gtttgggttc	tctacatgca	180
taacaaaccc	tgctccaatc	tgtcacataa	aagtctgtga	cttgaagttt	antcagcacc	240
cccaccaaac	tttatttttc	tatgtgtttt	ttgcaacata	tgagtgtttt	gaaaataagg	300
tacccatgtc	tttatta					317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

ttcgagggtac	aatcaactct	cagagtgtag	tttccttcta	tagatgagtc	agcattaata	60
taagccacgc	cacgctcttg	aaggagtctt	gaattctcct	ctgctcactc	agtagaacca	120
agaagaccaa	attcttctgc	atcccagctt	gcaaacaaaa	ttgttcttct	aggtctccac	180
ccttcctttt	tcagtgttcc	aaagctcctc	acaatttcat	gaacaacagc	t	231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaagag	ggcataataa	tcagtctcac	agtaggggtc	accatcctcc	aagtgaaaaa	60
cattgttccg	aatgggcttt	ccacaggcta	cacacacaaa	acaggaaaca	tgccaagttt	120
gtttcaacgc	attgatgact	tctccaagga	tcttcctttg	gcacgacca	cattcagggg	180
caaagaattt	ctcatagcac	agctcacaat	acagggtcc	tttctcctct	a	231

<210> 456

<211> 231

<212> DNA

<213> Homo sapiens

<400> 456

ttggcaggta	cccttacaaa	gaagacacca	taccttatgc	gttattaggt	ggaataatca	60
ttccattcag	tattatcggt	attattcttg	gagaaacct	gtctgtttac	tgtaaccttt	120
tgcaactcaa	ttcctttatc	aggaataact	acatagccac	tatttacaaa	gccattggaa	180
cctttttatt	tggtgcagct	gctagtcagt	cctgactga	cattgccaag	t	231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

<400> 457
 cgaggtaccc aggggtctga aaatctctnn ttntantagtc gatagcaaaa ttgttcatca 60
 gcattcctta atatgatctt gctataatta gattttttctc cattagagtt catacagttt 120
 tatttgattt tattagcaat ctcttttcaga agacccttga gatcattaag ctttgtatcc 180
 agttgtctaa atcgatgcct catttctctt gaggtgtcgc tggcttttgt g 231

<210> 458
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 458
 aggtctgggt cccccactt ccactcccct ctactctctc taggactggg ctgggccaaag 60
 agaagagggg tggttaggga agccgttgag acctgaagcc ccaccctcta ccttccttca 120
 acaccctaac cttgggtaac agcatttgga attatcattt gggatgagta gaatttccaa 180
 ggtcctgggt taggcatttt gggggggccag accccaggag aagaagattc t 231

<210> 459
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 459
 ggtaccgagg ctctgctgaca cagagaaaacc ccaacgcgag gaaaggaatg gccagccaca 60
 ccttcgcgaa acctgtgggt gcccaccagt cctaaccgga caggacagag agacagagca 120
 gccctgcact gttttccctc caccacagcc atcctgtccc tcattggctc tgtgctttcc 180
 actatacaca gtcaccgtcc caatgagaaa caagaaggag caccctccac a 231

<210> 460
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 460
 gcaggtataa catgctgcaa caacagatgt gactaggaac ggccggtgac atggggaggg 60
 cctatcaccc tattcttggg ggctgtttct tcacagtgat catgaagcct agcagcaaat 120
 cccacctccc cacacgcaca cggccagcct ggagcccaca gaagggtcct cctgcagcca 180
 gtggagcttg gtcacgcctc cagtcacccc ctaccaggct taaggataga a 231

<210> 461
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 461
 cgaggtttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggagggtc 60
 gcgtgtgctc cagaagagtg tgtgcatgcc agaggggaaa caggcgcttg tgtgtcctgg 120
 gtgggggttca gtgaggagtg ggaaattggt tcagcagaac caagccgttg ggtgaataag 180
 agggggattc catggcactg atagagccct atagtttcag agctgggaat t 231

<210> 462
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 462
 aggtaccctc attgtagcca tgggaaaatt gatgttcagt ggggatcagt gaattaaatg 60
 gggatcatga agtataaaaa ttaaaaaaaaa aagacttcat gcccaatctc atatgatgtg 120

146

gaagaactgt tagagagacc aacagggtag tggggttagag atttccagag tcttacattt 180
tctagaggag gtattttaatt tcttctcact catccagtgt tgtatttagg a 231

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

tactccagcc tgggtgacaga gcgagaccct atcaccgccc cccaccccccac caaaaaaaaaa 60
actgagtaga caggtgtcct cttggcatgg taagtcttaa gtcccctccc agatctgtga 120
catttgacag gtgtcttttc ctctggacct cggtgtcccc atctgagtga gaaaaggcag 180
tggggagggtg gatcttccag tcgaagcggt atagaagccc gtgtgaaaag c 231

<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

gtactctaag attttatcta agttgccttt tctgggtggg aaagtttaac cttagtgact 60
aaggacatca catatgaaga atgtttaagt tggagggtggc aacgtgaatt gcaaacaggg 120
cctgcttcag tgactgtgtg cctgtagtcc cagctactcg ggagtctgtg tgaggccagg 180
ggtgccagcg caccagctag atgctctgta acttctagge cccattttcc c 231

<210> 465

<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

catgttggtg tagctgtggt aatgctggct gcatctcaga cagggttaac ttcagctcct 60
gtggcaaat agcaacaaat tctgacatca tatttatggt ttctgtatct ttgttgatga 120
aggatggcac aatttttgct tgtgttcata atatactcag attagttcag ctccatcaga 180
taaactggag acatgcagga cattagggta gtgttgtagc tctggtaatg a 231

<210> 466

<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

caggtaacct tttccattgg atactgtgct agcaagcatg ctctccgggg tttttttaat 60
ggccttcgaa cagaacttgc cacataccca ggtataatag tttctaacat ttgcccagga 120
cctgtgcaat caaatattgt ggagaattcc ctagctggag aagtcacaaa gactatagge 180
aataatggag accagtccca caagatgaca accagtcgtt gtgtgcggct g 231

<210> 467

<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

gtacaccctg gcacagtcca atctgaactg gttcggcact catctttcat gagatggatg 60
tgggtggcttt tctccttttt catcaagact cctcagcagg gagcccagac cagcctgcac 120
tgtgccttaa cagaaggctt tgagattcta agtggggaatc atttcagtga ctgtcatgtg 180
gcatgggtct ctgccaagc tcgtaatgag actatagcaa ggcggtgtg ggacgtcagt 240
tgtgacctgc tgggcctccc aatagactaa caggcagtg cagttggacc caagagaaga 300
ctgcagcaga c 311

<210> 468

<211> 3112

<212> DNA

<213> Homo sapi ns

<400> 468

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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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tataatcaaa	tacactttta	gtatttgctg	tctcatgtga	tgatgaatct	catatgtgtc	420
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<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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gcatgaattc	tgtgaaaagc	ttgttgata	ttgtgataga	gatagagaaa	tgaagtatat	240
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ccataaacat	tccctctgtg	gctcttgcat	ttcatatatt	tatctaaact	cttataatca	360
aattacactt	ttagtatttg	ctgtctcatg	tgatgatgaa	tctcatatgt	gtcccttctt	420
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aggaagagct	tctcaggcag	aaggaataat	gtatgcctga	catgttcaag	gaattacaag	540
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<210> 471
<211> 812
<212> DNA
<213> Homo sapiens

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gaacgcacag tttaggcagc agggccagaa tctgaccct ctgcccgtg gttatctcct 240
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acatgtcact acttagacat tatattgtca tcttgcctgt tctagtgtat ttaattatct 660
ccatttcagc agatgtgtgg cctcagatgg taaagtcagc agcctttctt atttctcacc 720
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<210> 472
<211> 515
<212> DNA
<213> Homo sapiens

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caatcaggat attgaacctg gacaagagag agaaggaaca cctccgatcg aagaacgtaa 240

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150

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<210> 473

<211> 750

<212> PRT

<213> Homo sapiens

<400> 473

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Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
      35              40              45
Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
      50              55              60
Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
      65              70              75              80
Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
      85              90              95
Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
      100             105             110
Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
      115             120             125
Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
      130             135             140
Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
      145             150             155             160
Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
      165             170             175
Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
      180             185             190
Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
      195             200             205
Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
      210             215             220
Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys
      225             230             235             240
Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly
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Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr

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Leu	Leu	Glu	Lys	Met	Gly	Gly	Ser	Ala	Pro	Pro	Asp	Ser	Ser	Trp	Arg
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Gly	Ser	Leu	Lys	Val	Pro	Tyr	Asn	Val	Gly	Pro	Gly	Phe	Thr	Gly	Asn
				325					330					335	
Phe	Ser	Thr	Gln	Lys	Val	Lys	Met	His	Ile	His	Ser	Thr	Asn	Glu	Val
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Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Arg	Gly	Ala	Val	Glu	Pro
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Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ser	Trp	Val	Phe	Gly
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Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Glu	Ile	Val	Arg
		385				390					395				400
Ser	Phe	Gly	Thr	Leu	Lys	Lys	Glu	Gly	Trp	Arg	Pro	Arg	Arg	Thr	Ile
				405					410					415	
Leu	Phe	Ala	Ser	Trp	Asp	Ala	Glu	Glu	Phe	Gly	Leu	Leu	Gly	Ser	Thr
			420					425					430		
Glu	Trp	Ala	Glu	Glu	Asn	Ser	Arg	Leu	Leu	Gln	Glu	Arg	Gly	Val	Ala
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Tyr	Ile	Asn	Ala	Asp	Ser	Ser	Ile	Glu	Gly	Asn	Tyr	Thr	Leu	Arg	Val
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Asp	Cys	Thr	Pro	Leu	Met	Tyr	Ser	Leu	Val	His	Asn	Leu	Thr	Lys	Glu
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Leu	Lys	Ser	Pro	Asp	Glu	Gly	Phe	Glu	Gly	Lys	Ser	Leu	Tyr	Glu	Ser
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			500					505					510		
Ser	Lys	Leu	Gly	Ser	Gly	Asn	Asp	Phe	Glu	Val	Phe	Phe	Gln	Arg	Leu
		515					520					525			
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Lys	Phe	Ser	Gly	Tyr	Pro	Leu	Tyr	His	Ser	Val	Tyr	Glu	Thr	Tyr	Glu
		545				550					555				560
Leu	Val	Glu	Lys	Phe	Tyr	Asp	Pro	Met	Phe	Lys	Tyr	His	Leu	Thr	Val
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Ala	Gln	Val	Arg	Gly	Gly	Met	Val	Phe	Glu	Leu	Ala	Asn	Ser	Ile	Val
			580					585					590		

152

Leu Pro Phe Asp Cys Arg Asp Tyr Ala Val Val Leu Arg Lys Tyr Ala
 595 600 605
 Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr
 610 615 620
 Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr
 625 630 635 640
 Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser
 645 650 655
 Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu
 660 665 670
 Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg
 675 680 685
 His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser
 690 695 700
 Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
 705 710 715 720
 Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala
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<210> 474
 <211> 386
 <212> PRT
 <213> Homo sapiens

<400> 474
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 Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
 35 40 45
 Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
 50 55 60
 Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
 65 70 75 80
 Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
 85 90 95
 Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
 100 105 110
 Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly
 115 120 125
 Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His

153

130 135 140
 Thr Val Pro Leu Ser Glu Asp Gln Leu Leu Tyr Leu Pro Phe Arg Asn
 145 150 155 160
 Cys Pro Arg Phe Gln Glu Leu Glu Ser Glu Thr Leu Lys Ser Glu Glu
 165 170 175
 Phe Gln Lys Arg Leu His Pro Tyr Lys Asp Phe Ile Ala Thr Leu Gly
 180 185 190
 Lys Leu Ser Gly Leu His Gly Gln Asp Leu Phe Gly Ile Trp Ser Lys
 195 200 205
 Val Tyr Asp Pro Leu Tyr Cys Glu Ser Val His Asn Phe Thr Leu Pro
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 Ser Trp Ala Thr Glu Asp Thr Met Thr Lys Leu Arg Glu Leu Ser Glu
 225 230 235 240
 Leu Ser Leu Leu Ser Leu Tyr Gly Ile His Lys Gln Lys Glu Lys Ser
 245 250 255
 Arg Leu Gln Gly Gly Val Leu Val Asn Glu Ile Leu Asn His Met Lys
 260 265 270
 Arg Ala Thr Gln Ile Pro Ser Tyr Lys Lys Leu Ile Met Tyr Ser Ala
 275 280 285
 His Asp Thr Thr Val Ser Gly Leu Gln Met Ala Leu Asp Val Tyr Asn
 290 295 300
 Gly Leu Leu Pro Pro Tyr Ala Ser Cys His Leu Thr Glu Leu Tyr Phe
 305 310 315 320
 Glu Lys Gly Glu Tyr Phe Val Glu Met Tyr Tyr Arg Asn Glu Thr Gln
 325 330 335
 His Glu Pro Tyr Pro Leu Met Leu Pro Gly Cys Ser Pro Ser Cys Pro
 340 345 350
 Leu Glu Arg Phe Ala Glu Leu Val Gly Pro Val Ile Pro Gln Asp Trp
 355 360 365
 Ser Thr Glu Cys Met Thr Thr Asn Ser His Gln Gly Thr Glu Asp Ser
 370 375 380
 Thr Asp
 385

<210> 475
 <211> 261
 <212> PRT
 <213> Homo sapiens

<400> 475
 Met Trp Val Pro Val Val Phe Leu Thr Leu Ser Val Thr Trp Ile Gly
 5 10 15
 Ala Ala Pro Leu Ile Leu Ser Arg Ile Val Gly Gly Trp Glu Cys Glu
 20 25 30

Val Gly Gly Trp Glu Cys Glu Lys His Ser Gln Pro Trp Gln Val Leu
35 40 45

155

Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val Leu Val His Pro
 50 55 60
 Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Asn Lys Ser Val Ile
 65 70 75 80
 Leu Leu Gly Arg His Ser Leu Phe His Pro Glu Asp Thr Gly Gln Val
 85 90 95
 Phe Gln Val Ser His Ser Phe Pro His Pro Leu Tyr Asp Met Ser Leu
 100 105 110
 Leu Lys Asn Arg Phe Leu Arg Pro Gly Asp Asp Ser Ser His Asp Leu
 115 120 125
 Met Leu Leu Arg Leu Ser Glu Pro Ala Glu Leu Thr Asp Ala Val Lys
 130 135 140
 Val Met Asp Leu Pro Thr Gln Glu Pro Ala Leu Gly Thr Thr Cys Tyr
 145 150 155 160
 Ala Ser Gly Trp Gly Ser Ile Glu Pro Glu Glu Phe Leu Thr Pro Lys
 165 170 175
 Lys Leu Gln Cys Val Asp Leu His Val Ile Ser Asn Asp Val Cys Ala
 180 185 190
 Gln Val His Pro Gln Lys Val Thr Lys Phe Met Leu Cys Ala Gly Arg
 195 200 205
 Trp Thr Gly Gly Lys Ser Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu
 210 215 220
 Val Cys Asn Gly Val Leu Gln Gly Ile Thr Ser Trp Gly Ser Glu Pro
 225 230 235 240
 Cys Ala Leu Pro Glu Arg Pro Ser Leu Tyr Thr Lys Val Val His Tyr
 245 250 255
 Arg Lys Trp Ile Lys Asp Thr Ile Val Ala Asn Pro Gly Ser Met Ala
 260 265 270
 Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile Leu Gly
 275 280 285
 Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly
 290 295 300
 Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
 305 310 315 320
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
 325 330 335
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
 340 345 350
 Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
 355 360 365
 Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
 370 375 380

Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
 385 390 395 400
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
 405 410 415
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
 420 425 430
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
 435 440 445
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
 450 455 460
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
 465 470 475 480
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
 485 490 495
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
 500 505 510
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser Glu Phe Met Val
 515 520 525
 Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala Gln Leu
 530 535 540
 Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu Ala Ala
 545 550 555 560
 Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu
 565 570 575
 Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly Leu Val
 580 585 590
 Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly Arg Tyr
 595 600 605
 Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile Leu Leu
 610 615 620
 Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu Leu Cys
 625 630 635 640
 Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly Val Gly
 645 650 655
 Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu Ala Leu
 660 665 670
 Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala Tyr Ser
 675 680 685
 Val Tyr Ala Phe Met Ile Ser Leu Gly Gly Cys Leu Gly Tyr Leu Leu
 690 695 700
 Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr

705		710		715		720
Gln Glu Glu Cys	Leu Phe Gly Leu Leu Thr	Leu Ile Phe Leu Thr Cys				
	725		730			735
Val Ala Ala Thr	Leu Leu Val Ala Glu Glu Ala Ala Leu Gly Pro Thr					
	740		745			750
Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His Cys Cys						
	755		760			765
Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro						
	770		775			780
Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg Arg Leu						
	785		790			795
Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe Thr Leu						
	805		810			815
Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg						
	820		825			830
Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg						
	835		840			845
Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe						
	850		855			860
Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val						
	865		870			875
Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys						
	885		890			895
Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly						
	900		905			910
Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu						
	915		920			925
Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr						
	930		935			940
Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly						
	945		950			955
Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly						
	965		970			975
Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys						
	980		985			990
Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val						
	995		1000			1005
Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala						
	1010		1015			1020
Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser Ile Val						
	1025		1030			1035
						1040

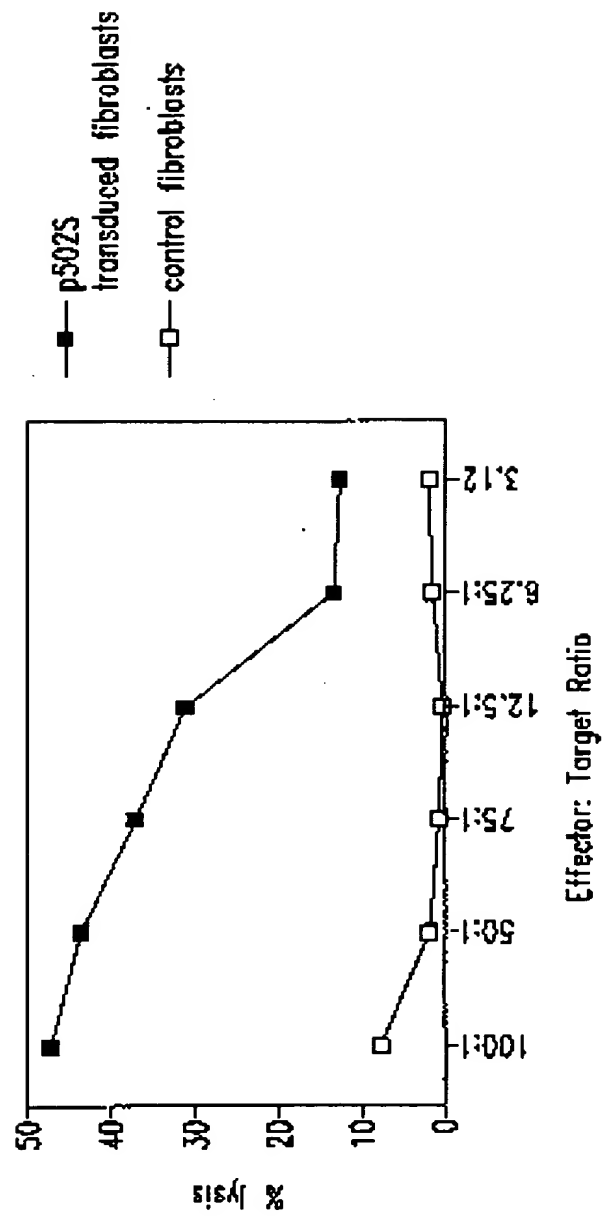
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1045 1050 1055

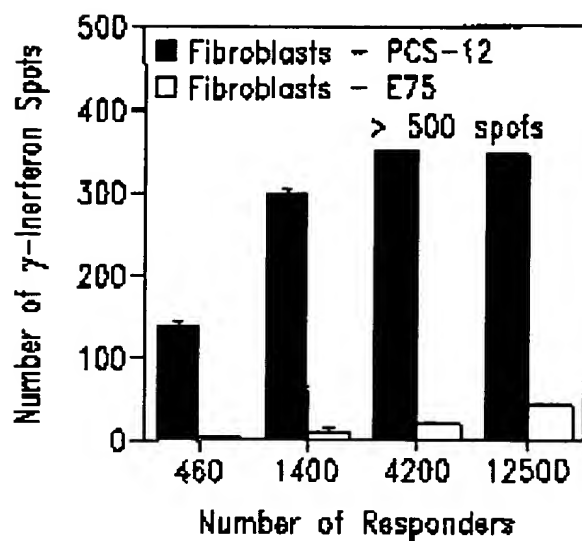
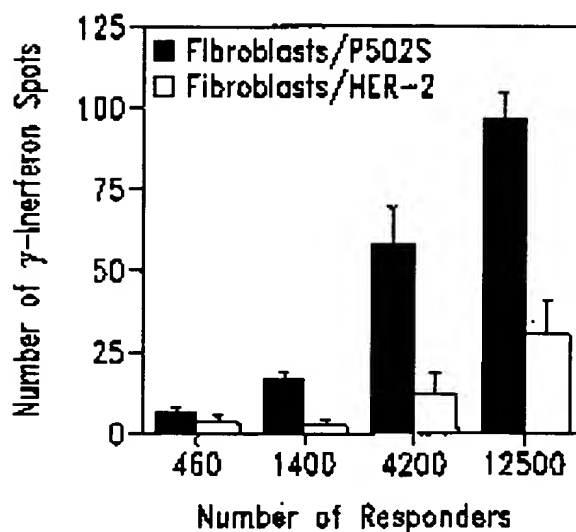
Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp Lys Ser
1060 1065 1070

Asp Leu Ala Lys Tyr Ser Ala
1075

1/6

*Fig. 1*

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*Fig. 2A**Fig. 2B*

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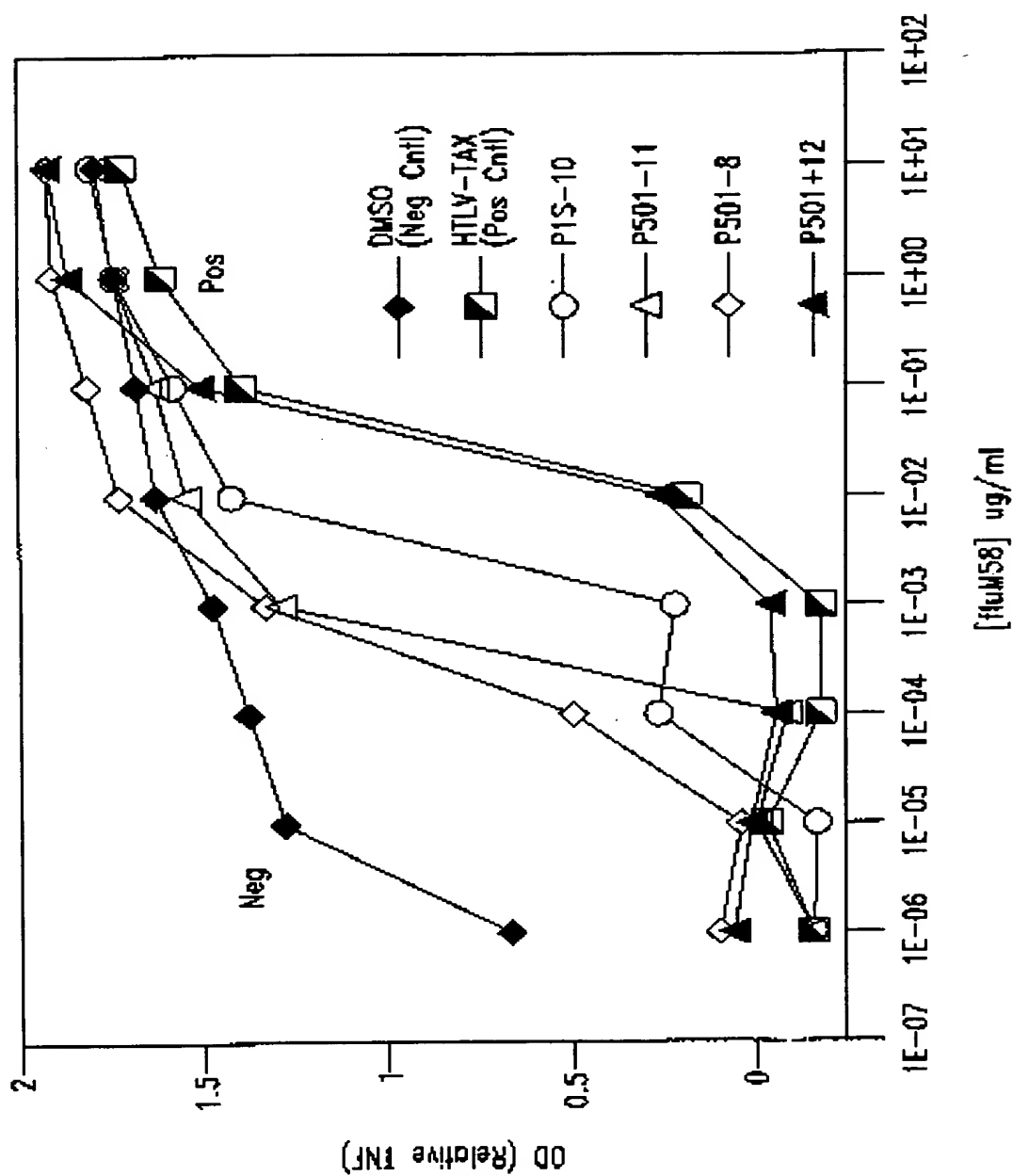


Fig. 3

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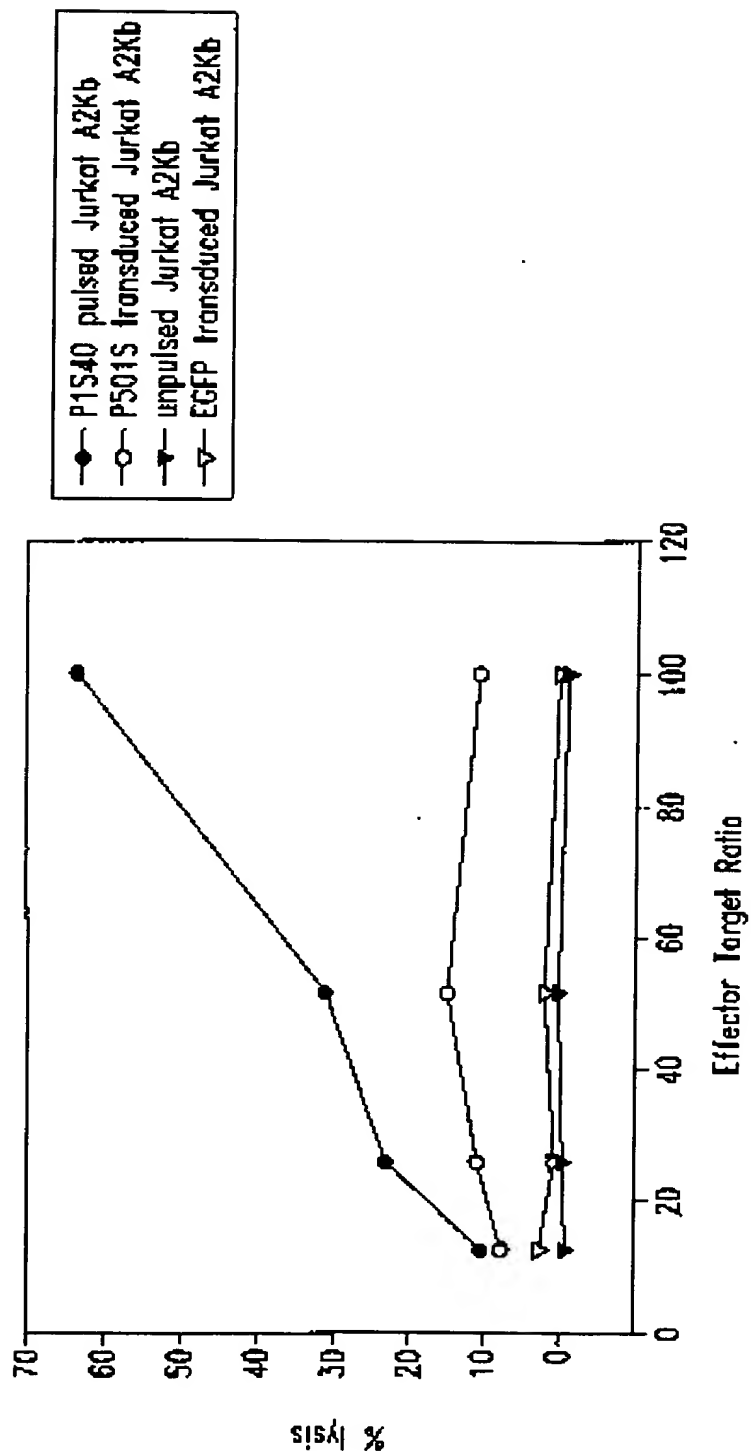


Fig. 4

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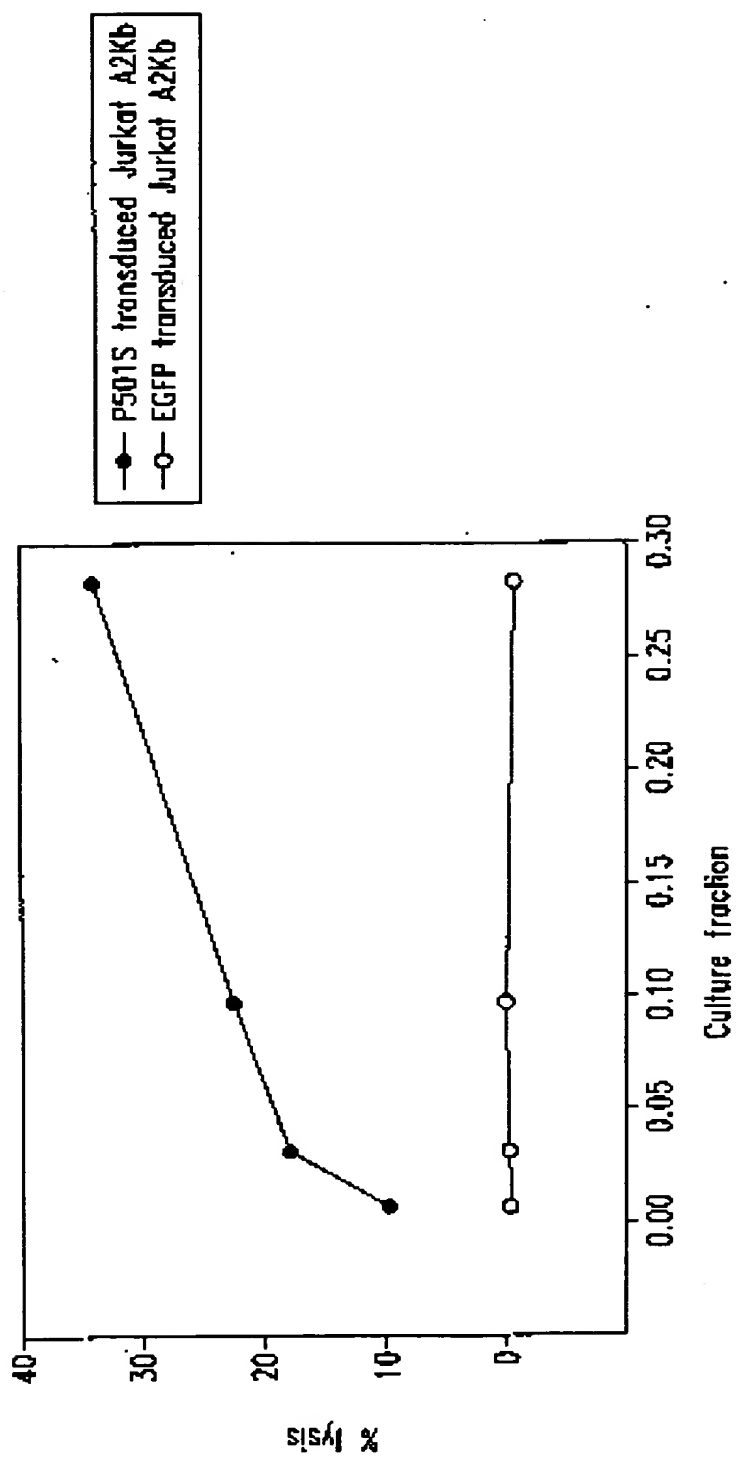
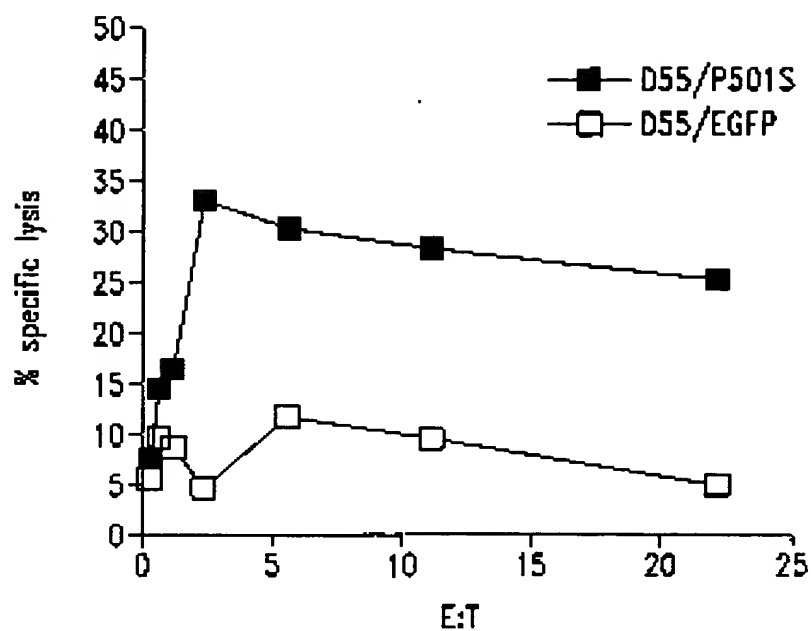
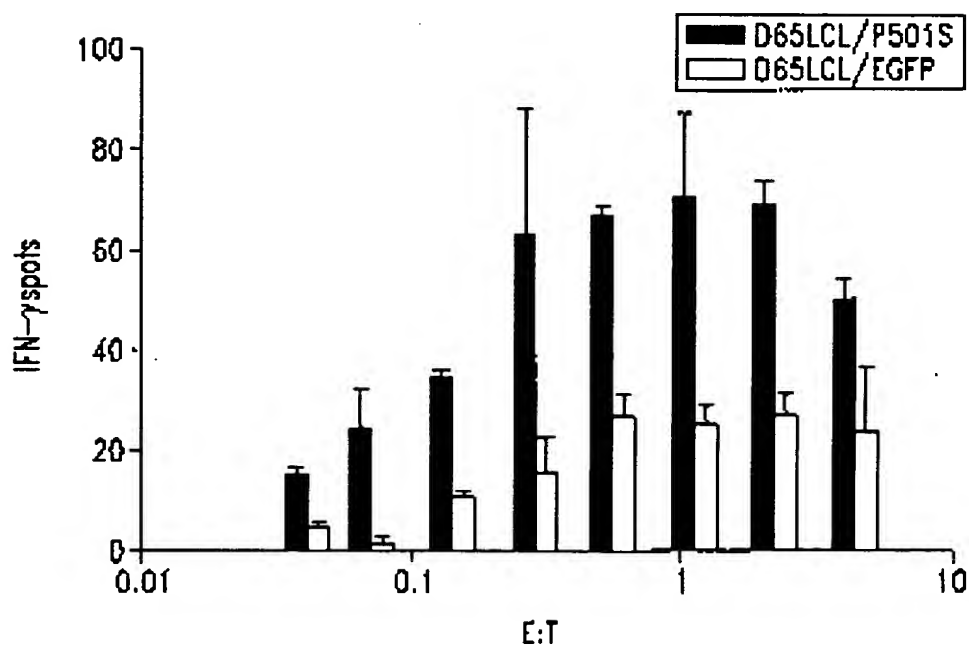


Fig. 5

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*Fig. 6A**Fig. 6B*

SEQUENCE LISTING

<110> Corixa Corporation et al.

<120> COMPOSITIONS AND METHODS FOR THE THERAPY AND
DIAGNOSIS OF PROSTATE CANCER

<130> 210121.534PC

<140> PCT

<141> 2000-10-04

<160> 476

<170> FastSEQ for Windows Version 3.0

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<213> Homo sapien

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ccaggggggc	cagtcctctt	cttacttca	tcccatccc	atgccaaagg	aagaccctcc	180
ctccttggtc	cacagccttc	totaggtctc	ccagtgcctc	caggacagag	tgggttatgt	240
tttcagctcc	atccttgcctg	tgagtgtctg	gtgcgttgtg	cctccagott	ctgctcagtg	300
cttcattggc	agtgtccagc	acatgtcact	ctccactctc	tcagtgtgga	tcactagtt	360
ctagagcggc	cggccaccgc	gtggagctcc	agcttttgtt	cccttttagtg	agggttaatt	420
gcgcgtttgg	cgtaatcatg	gtcataactg	tttcctgtgt	gaaattgtta	tcgcctcaca	480
attccacaca	acatacagac	cgggaagcata	aagtgtaaag	cctgggggtgc	ctaattgagtg	540
anctaactca	cattaattgc	gttgcgctca	ctgnccgctt	tcagtcnng	aaaactgtcg	600
tgccagctgc	attaatgaat	cggccaacgc	ncggggaaaa	gcggtttgcg	ttttgggggc	660
tcttcgcctt	ctcgcctcact	nantcctgcg	ctcggctcctt	cggctgcggg	gaacggtatc	720
actcctcaaa	ggnggtatta	cggttatccn	naaatcnngg	gatacccnng	aaaaaatctt	780
aacaaaaggg	cancuaaggg	cnguaacgta	aaaa			814

<210> 2

<211> 816

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(816)

<223> n = A, T, C or G

<400> 2

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ttcatggctg	ttggagcaat	agaaccccag	ttctacgagc	tgctgatcaa	aggacttgga	120
ctaaagtctg	atgaacttcc	caatcagatg	agcatggatg	attggccaga	aatgaagaag	180
aagtttgcag	atgtatttgc	aaagaagacg	aaggcagagt	ggtgtcaaat	ctttgacggc	240
acagatgctc	gtgtgactcc	ggttctgact	tttgaggagg	ttgttcacaa	tgatucacac	300
aaggaaacggg	gctcgittat	caccagtgag	gagcaggacg	tgagcccccg	ccctacaccc	360
ctgctgttaa	acaccccagc	catcccttct	ttcaaaaggg	atcactatgt	tctagagcgc	420
gcgcgccacg	cggctggagct	ccagcttttg	ttcccttttg	tgaquellaa	ttgcgccttc	480

2

ggcgtaataca	tgggtcatagc	tgttttctgt	gtgaaattgt	tatccgctca	caattccccc	540
aacatacgag	ccggaacata	aagtgttaag	cctggggtgc	ctaagtantg	agctaactcn	600
cattaattgc	gttgcgctca	ctgcccgcct	tccagtcggg	aaaactgtcg	tgccactgcn	660
ttantgaate	ngccaccccc	cgggaaaaag	cggttgcctt	ttgggcctct	tccgctttcc	720
tcgtctcattg	atcctngcnc	ccggtcttcg	gtcgcgngga	acggttcact	cctcaagggc	780
ggtnfncogg	ttatcccca	acnggggata	ccngga			816

<210> 3
 <211> 773
 <212> DNA
 <213> Homo sapien

<220>
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 <222> (1)...(773)
 <223> n = A,T,C or G

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tctgtctct	cactggtag	aaacgggccc	cgttccttgt	tgtgatcatg	atgaacaacc	120
tctcaaaag	tcagaaccgg	agtcacacag	gcattctgtc	cgtcaagat	ttgacaccac	180
tctgctctcg	tcttctttgc	aaatcacctc	gcacacttct	tcttcatttc	tggccaatca	240
tccatgctca	tctgattggg	agttcctca	gactttagtc	cannctcttt	gatcagcagc	300
togtagaact	gggttctat	tgtcccaacc	gcoctgaelt	ccccatctgc	tgtcctgtaa	360
gtogtataga	aagggtgctc	accatccaac	atgttctgtc	ctcggggggg	ggcccggtao	420
ccaattcgcc	ctatantgag	tctgattacg	cgcgtcact	ggcggcgtt	ttacaacgtc	480
gtgactggga	aaacctggg	cgttaccac	ttaatcgct	tgcagcccat	ccccctttcg	540
ccagctgggc	gtaatancca	aaaggccggc	accgatcgcc	cttccaacag	ttgcgcacct	600
gaatgggnaa	atgggacccc	cctgttacgg	cgcattnaac	ccccgcnggg	tttngttgtt	660
acccctacnt	nnacogctta	cactttgcca	gcgccttano	gcccgctccc	tttncctttt	720
cttcccttcc	tttccncccn	ctttcccccg	gggtttcccc	cntcaaaccc	cna	773

<210> 4
 <211> 828
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(828)
 <223> n = A,T,C or G

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aatgggcagg	cacagggtga	tgcacatgtt	tctgaaatgg	gtataatttc	gtcctctcct	120
tcgggaacact	ggtgtgtctc	gaagacttct	cgtcagttt	cagtgaggac	acacacaaag	180
acgtgggtga	ccatgtttgt	tgtgggtgac	agagatggga	ggggtggggc	ccacctgga	240
agagtggaca	gtgacacacg	gtggacactc	tctacagatc	actgaggata	agctggagcc	300
acaatgcattg	aggcacacac	acagcaaggc	tgaacctgta	aacatagccc	acgtgtctct	360
gnnggcactg	ggagccctan	atnaggccgt	gagcancaag	aaggggaggc	tccactagtt	420
ctanagcggc	cgrcacccgc	gtgganctcc	anccttttgt	cccttttagt	agggttaatt	480
gogcgcttg	cntaatcatg	gtcatanctn	tttctgtgt	gaaattgtta	tccgtcaca	540
attccacaca	acatacganc	cggaacacata	aantgtaaac	ctggggtgcc	taattganta	600
ctaactcaca	ttaattgcgt	tgcgtcact	gcccgttttc	caatcnggaa	acctgtcttg	660
ccncttgcat	tnatgaatcn	gccaaacccc	ggggaaaagg	gtttgcgttt	tgggcgctct	720
tccgttctct	cnctcantta	ntccctnone	tgggtcattc	cggctgcngc	aaaccggttc	780
accnctccca	aagggggtat	tccggttttc	cenaatccgg	gganance		828

<210> 5
 <211> 834
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(834)
 <223> n = A, T, C or G

<400> 5

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agtttttaatt	gcataccaaag	tactaacasa	aactctagca	atcaagaatg	gcagcatggt	120
atttttataac	aatacaacacc	tgtggctttt	aaaatttggg	tttcataaga	taattttatac	180
tgaagtaaat	ctagccatgc	ttttaaaaaa	tgcttttaggt	cactccaagc	ttggcagtta	240
acattttggca	taaaacaataa	taaaacaatc	acaatttaat	aaataacaaa	tacaacattg	300
tagggcataa	tcatatacag	tataaggaaa	aggtagtagt	gtagtagtaag	cagttatttag	360
aatagaatac	cttggcctot	atgcaaatat	gtctagacac	tttgattcac	tcagccotga	420
cattcagttt	tcaaagtagg	agacagggtc	tacagtatca	tttccaggtt	tcaaacaacat	480
tgaaaacaag	tagaaaatga	tgaattgatt	tttatteatg	cattacatcc	tcaagagtta	540
tcaccaaccc	ctcagttata	aaaaattttc	aagtttatatt	agtcatataa	cttgggtgtgc	600
ttatttttaa	ttagtgttaa	atggattaag	tgaagacaa	aatggtcccc	taagtgtgatt	660
gatattggtc	atttttaoca	gcttctaat	ctnaactttc	aggcttttga	actggaacat	720
tgnatnacag	tggtccanag	tttcaacctc	ctggaacatt	acagtgtgct	tgattcaaaa	780
tgctattttg	ttaaaaatta	aattttaacc	tggtggaaaa	ataatttgaa	atna	834

<210> 6
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A, T, C or G

<400> 6

tttttttttt	tttttttttt	aagacccotca	tcaatagatg	gagacatoca	gaaatagtc	60
aaccacatct	acaaaatgcc	agtatcaggc	ggcggcttc	aagcuaaagc	galqlllqga	120
tgttaugtga	aattattagtt	gycggatgaa	gcagatagtg	aggaaagttg	agccaat.aet	180
gacgtgaagt	ccgtggaagc	nlglggctac	aaaagaaagc	ggcggctaga	tgccgtcggg	240
aatggtgaa	ggagacacga	agtaetctga	ggctt.gtagg	agggttaaat	agagacccag	300
taaaattgla	ataagcagtg	cttgaettat	ttggtttcgg	ttgtttttcta	ttagactatg	360
gtgaagcl.ca	gtgattgata	ctcctgatgc	gagtaatacg	gatgtgttta	ggagtgggac	420
ttctaggggg	tttagcgggg	tgatgcctgt	tgggggccag	tgccctocta	gttggggggg	480
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ttggtatgtg	ctttctcgtg	ttacatcgcg	ccatcattgg	tatatggtta	gtgtgttggg	660
ttantanggc	ctancatgaa	gaacttttgg	antggaatta	aatcaatngc	ttggccggaa	720
gtcattanga	nggctnaaaa	ggccctgtta	ngggtctggg	ctnggtttta	ccnaccat	780
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<210> 7
 <211> 817
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(817)
 <223> n = A, T, C or G

<400> 7

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cgggccctat	ttcaagattt	tttaggggaa	ttaattctag	gacgatgggt	atgaaactgt	120
ggtttgcctc	acagatttca	gagcattgac	cgtagtatat	ccccggtcgt	gtagcgggtga	180

aagtgggtt	gttttagacgt	ccgggaattg	catctgtttt	taagccta	gtggggacag	240
ctcctgaagtg	caagcgcgtc	tgtgatgtaa	tcattatacn	aatgggggct	tcaatcgga	300
gtactactcg	attgtcaacg	tcaggagtc	gcaggtcgcc	tggttctagg	aataatggg	360
gaagtatgta	ggaaattgaag	attaatccgc	cgtagtcggg	gttctcctag	gttcaatccc	420
attgggtggcc	aattgatttg	atggtaaggg	gagggtccgt	tgaactcgtc	tgttatgtaa	480
aggatncctt	ngggatggga	aggcnatnae	ggactangga	tnaatggcgg	gcangatatt	540
tcaaacngtc	tctanttcct	gaacgcgtcg	aaatgttaat	aanaattaan	tttngttatt	600
gaatntttnng	gaaaagggct	tacaggacta	gaaaccaa	angasaanta	atnntaanng	660
cnttatcntn	aaaggtatna	accnctccta	tnatcccacc	caatngnatt	ccccacnchn	720
acnattggat	nccccanttc	canaaanggc	cnccccccg	tgnannccnc	cttttgttcc	780
cttnantgan	ggttattcnc	ccctngcntt	atcancc			817

<210> 8

<211> 799

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1) . . . (799)

<223> n = A, T, C or G

<400> 8

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ctgaagcgca	cgtcccaga	ggtagacttg	gcactgaaac	agctgggaca	catccgcga	180
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tgggtggccg	angcctganc	cgtctgctct	tgcctgcccc	angtgggccc	ccaccccttg	300
acctgcctgg	gtccaaacac	tgagccctgc	tggcggactt	caagganaac	ccccacangg	360
ggattttgct	cctanantaa	ggctcatctg	ggcctcgccc	ccccacactg	gttggccttg	420
tctttgagnt	gagccccatg	tccatctggg	ccactgtcng	gacacacttc	ngggagtggt	480
ctccttaaca	ccacannatg	cccggtctct	cccggaaccc	antcccancc	tnggaaggat	540
caagnocctn	atccactnnt	ncctanaaccg	gcncncnccg	cngtggaaac	cnccttntgt	600
tccctttctt	tnagggttaa	tnnccgcttg	gccttnccan	ngtccctncc	nttttccnnt	660
gttnaaattg	ttanccccc	ncnntcccn	cnncnnccan	cccgaacccn	annntnann	720
ncctgggggt	ncnnccngat	tgccccnncc	ncctntant	tgcnttnggg	nnccntgccc	780
ctttccctct	ngggganncc					799

<210> 9

<211> 801

<212> DNA

<213> Homo sapien

<220>

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<222> (1) . . . (801)

<223> n = A, T, C or G

<400> 9

acgccttgat	cctcccagcc	tgggaactggt	tctgggagga	gccggggcatg	ctgtggtttg	60
taangatgac	actcccaag	gtggtcctga	cagtggccua	gatggacatg	gggctcact	120
caaggacaag	gccaacaggt	gctggggccg	aaqccacat	gatccttact	ctatgagcaa	180
aatccctgt	gggggcttct	ccttggaagtc	cggcancagg	gtcagttctt	tggacccang	240
caggtcatgg	ggttgtngnc	caactggggg	cncuacogca	aaanggonca	gggctcngn	300
ccccatccc	angacgcggc	tacactnctg	gaactccccc	tcacacactt	tcatgcgctg	360
ttcttaccng	cgnatntgtc	ccactgtttt	cngtgcenac	tcacacttct	nggaogtgog	420
ctecatccgc	cgggantcnc	ntccccgctt	tgtccccl; tc	cacgtaccan	caacuaattt	480
cnccntantg	caccnattcc	cacnttttnc	agntttccnc	nncgngcttc	cttnlaaaag	540
ggttganecc	cggaaaatnc	cccaaagggg	gggggcccng	tacccaaactn	ccccctnaaa	600
gctgaantcc	ccatnacnnc	gnctcnatgg	ancntccnt	tttaannacn	ttctnaactt	660
gggaanancc	ctcgnccntn	ccccctntaa	tccncccttg	cnangnncnt	cccccnntcc	720
ncccnntng	gcntntnann	cnaaaaaggc	ccnnnancaa	tctcctnncc	cctcanttcc	780

ccanccctcg aatcgcccn c

801

<210> 10
 <211> 789
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(789)
 <223> n = A,T,C or G

<400> 10
 cagtctatnt ggccagtgtg gcagctttcc ctgtggctgc cgggtgcaca tgcctgtccc 60
 acagtgtggc cgtggtgaca gcttcagccg ccttcaccgg gtccaccctc tcagccctgc 120
 agatccctgc ctacacactg gctccctctc accaccggga gaagcagctg ttcctgccc 180
 aataccgagg ggacactgga ggtgctagca gtgaggacag cctgatgacc agcttctgc 240
 caggccctaa gcttggagct cctttuuta atggacacgt gggcgcggga ggcagtggcc 300
 tgcctccacc tccaccgcg ctctgcgggg cctctgctgc tgatgtctcc gtacgtgtgg 360
 tgggtgggtg gccaccgan gccaggggtg ttccggggcg gggcatctgc ctggacctgc 420
 ccctctgga tagtctctcc tgcctgccc ngtggccccc tccctgttta tgggtctcc 480
 tgcctagctc agccagtctg tccctgctcc tatggtgtct gccgcaggcc tgggtctggt 540
 ccctttact ttctacacc ggtantattt gacaaagacg anttggccaa atactcagcg 600
 tlaaaaaall ccagcaacct tgggggtgga aggcctgctt cactgggtcc aactccccc 660
 tctgttaac cccatggggc tgcgggcttg gccgccaatt tctgttgcct ccaantnat 720
 gtggctctct gctgccacct gttgctggct gaagtgcata cngcncanct nggggggtng 780
 gnggttccc 789

<210> 11
 <211> 772
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(772)
 <223> n = A,T,C or G

<400> 11
 cccaccctac ccaaatatta gacaccaaca cagaaaagct agcaatggat tccctctctac 60
 ttgttaaat aaataagtta aatattttaa tgcctgtgtc tctgtgatgg caacagaagg 120
 accaacaggc cacatcctga taaaaggtaa gaggggggtg gatcagcaaa aagacagtgc 180
 tgtgggctga ggggacctgg ttcttctgtg ttgcccctca ggaactctcc cctacaaata 240
 actttcatat gtccaatcc catggaggag tgtttcatcc tagaaactcc catgcaggag 300
 ctacattaaa cgaagctgca ggttaagggg ctanagatg ggaaccagg tgcctgagtt 360
 tattcagctc ccaaaaaccc ttctctaggt gtgtctcaac taggaggtta gctgttaacc 420
 ctgagcctgg gtaatccacc tgcagagctc cgcattcca qtgcctgga ccttcttggc 480
 ctccctgtat aagtccagac tgaacccccc ttggaaggnc tccaglcagg cagccctana 540
 aactggggaa aagagaaaag gacgcccann ccccagctg tgcantcag cactcaaca 600
 gcacagggtg gcagcaaaa aaccccttta ctttggcaca aacaaaaact ngggggggca 660
 accccggcac ccnangggg qliaacagga ancggggnea cntggaaacc aattnaggca 720
 ggccnccncc cccnaatntt gctggggaat ttllcctccc cttaaattntt tc 772

<210> 12
 <211> 751
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_f ature
 <222> (1)...(751)
 <223> n = A,T,C or G

```

<400> 12
gcccccaatc cagctgccac accacccacg gtgactgcat tagttcggat gtcatacaaa      60
agctgattga agcaaccctc tacttttctg tcgtgagcct ttctgttggg gcagggtttca    120
ttggtgtgtg ttggtgacgt gtcattgcaa cagaatgggg gaaaggcaat gttctctttg    180
aaglonqqlg agtctcmeta atccgtatag ttggtgaagc cacagcaatt gagccctttc    240
atggtgtgtg tccacacttg agtgaagtct tcctgggaac cataatcttt ctctgatggca    300
ggcactacca gcaacgtcag ggaagtgtc agccattgtg gtgtacacca aggcgaccac    360
agcagctgcn acctcagcaa tgaagatgan gaggunatg aagaagaacg tcnccagggc    420
acacttgctc tcagtcttan caccatanca gccctgaaa accaananca aagaccacna    480
cnccggctgc gatgaagaaa tnaaccnccg ttgacaaact tgcattggac tggganccac    540
agtggccena aaatctttca aaaaggatgc cccctcnatt gaccccccaa atgccccatg    600
ccaacagggg ctgccccach cncnnaacga tgancnatt gnaaagatc tcnlqqict    660
tnatnaacnt gaacctgcn tngtggctcc tgttcaggnc cngggcclga cttctnaann    720
aangaactcn gaagncacca cngganannc g

```

```

<210> 13
<211> 729
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}... (729)
<223> n = A,T,C or G

```

```

<400> 13
gagccnqqcg tccctctgcc tgcacactca gtggcaacac ccgggagctg ttttgtcctt      60
tgtgganctc caggaagtnc ctctttcaga actcactgcc aagencctg aacaggagoc    120
accatgcagl gcttcagctt cattaagacc atgatgatcc ctgatgatcc gctctctctt    180
ctgtgtgtgt cagccctgtt ggcagctggg atctgggtgt caatcgatgg ggcactcttt    240
ctgaagatct tcggggcact gtcgtccagt gccatgcagt ttgtcaacgt gggctacttc    300
ctcatcgacg ccggcgcttg ggtcttagct ctagggttcc tgggctgcta tgggtgctaag    360
actgagagca agtgtgccct cgtgacgttc ttcttcatcc tccctcctcat ctctcattgt    420
gaggttgcaa tgcgtgtgtc gccttggtgt acaccacaat ggctgagcac ttctgacgt    480
tgctggtaat gcctgccatc aanaaaagat tatgggttcc cagggaactc tcaactcaagt    540
gttggaacac caccatgaaa gggctcaagt gctgtggctt cnnccaacta tacggatttt    600
aaagantcac ctacttmeta gaaaanagtg cctttccccc atttctgttg caattgacaa    660
acgtccccaa cccagccaat tgaaaacctg caccacaacc aaangggctc ccaaccanaa    720
allnaaggg

```

```

<210> 14
<211> 816
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> {1}... (816)
<223> n = A,T,C or G

```

```

<400> 14
tgtctcttct caaagtgtgt cttgttgcca taacaaccac cataggtaaa gggggcgag      60
tgttcgttga aggggttgta gtaccagcgc gggatgctct ccttgacagag tccctgtgtct    120
ggcaggtcca cgcagtgcgc tttgtcactg gggaaatgga tgcgctggag ctctgcaag    180
ccactctgtt attttcaca ggcagcctcg tcgagcgcgt ccgggcagtt ggggtgtct    240
tcacactcca ggaactgtc natgcagcag ccattgtctg agcgggaactg ggtgggtga    300
canqtgcccag agcacactgg atggcgctt tccatgnnan ggccctgng ggaagtccc    360
tgancccc n anctgcctct caaangccc accttgacca ccccgacugg ctagaatgga    420
atcttcttcc agaaaggtag tntttcttgt tgccccancc ancccnataa acaactctt    480
gcanalectc tccgnggggg tcntantacc ancggtggga aaqaaaccca agcnyugaac    540
caancttqll: tggatnugaa gcnataatct notnttctgc ctgggtggac gcacccanlna    600

```

ctgtmnanct	ttagnccontg	gtcctcntgg	gttcnncttg	aacctaaten	conntcaact	660
gggacaaggt	aantngcent	cctttnaatt	ccnanoncn	ccccctggt	tggggctttt	720
cnctctcta	ccccagaaan	ncogtgttcc	cccccaacta	ggggccnaaa	connttnttc	780
cacacccctn	ccccccccc	gggttcngnt	ggttng			816

<210> 15
 <211> 783
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)... (783)
 <223> n = A, T, C or G

<400> 15						
ccaaggcctg	ggcaggcata	naattgaagg	tacaaccccc	ggaacccctg	gtgctgaagg	60
atgtggaaaa	cacagalltg	cgctactgc	gggtgacac	ggatgtcagg	gtagagagga	120
aagacccnaa	ccaggtgqaa	clqlggggac	tcaagggaang	cacctacctg	ttccagctga	180
cagtgaactag	ctcagaccac	ccagaggaca	cgcccaacgt	cacagtcact	gtgctgtcca	240
ccaggcagac	agaagactac	tgctcgcat	ccaacaangt	gggtcgtgc	cggggtcttt	300
tcacacgctg	gtactatgac	cccacggagc	agatctgcaa	gagtttctgt	tatggaggct	360
gcttgggcaa	caagaacaac	taccttcggg	aagaagagt	cattctance	tgtcnggggt	420
tgcaaggtgg	gcctttgana	ngcanctctg	gggtcangc	gactttcccc	cagggtccct	480
ccatggaaa	gcgcacatcca	ntgttctctg	gcacctgtca	gcccacccag	tlccagclga	540
ncaatggctg	ctgcacnac	antttcctng	aattgtgaca	acacccccca	ntgcacccaa	600
ccctcccaac	aaagcttccc	tgtnaaaaa	tacnccant	ggctttlnac	aaacncccg	660
cnctccntt	ttcccnntn	aacaaagggc	ncnngentt	gaactgccc	aaccnnggaa	720
tcnccnngg	aaaaantncc	ccccctggt	ccnnaance	cccccncaa	anctncccc	780
ccc						783

<210> 16
 <211> 801
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)... (801)
 <223> n = A, T, C or G

<400> 16						
gccccaatc	cagctgccac	accacccacg	gtgactgcct	taqltcggat	gtcatacaaa	60
agctgattga	agcaaccctc	tactttttgg	tcgtgaagcc	tttgcttgg	gcaggtttca	120
ttggctgtgt	tggtgacgtt	gtcattgcaa	cagaatgggg	gaaaggcact	gttctctttg	180
aagtagggtg	agtcctcaaa	atccgtataq	tlaggtgaagc	cacagcactt	gagcccttcc	240
atggtggtgt	tcacacactt	aglgaggtct	tcctgggaac	cataatcttt	cttgatggca	300
ggcactacca	gcaacgtccg	gaagtgclca	gccattgttg	tgtacaccaa	ggcgaccaca	360
gcagctgcaa	cctcagcaat	gaagtgagg	aggaggatga	agaagaacgt	cncgaggcca	420
cacttgctct	ccgtcttagc	accatagcag	ccrangaaac	caagagcaaa	gaccacacag	480
ccngctgcga	atgaagaa	ntacccacgt	tgacaaactg	catggccact	ggaogacagt	540
tygcccqaan	atcttcagaa	aagggaatgc	ccatcgattg	aacacccana	tgcccactgc	600
cnacagggtt	gencnncn	gaaagaatga	gcoattgaag	aaggatcntc	ntggtcttaa	660
tyaactqaa	ccntgcctgg	tgcccctgt	tcagggtct	tggcagtga	ttctganaaa	720
aaqqaaangc	ntnagcccc	ccaaangana	aaacaccccc	gggtgttgc	ctgaattggc	780
gyccaaqqaan	ccctgcccc	g				801

<210> 17
 <211> 740
 <212> DNA
 <213> Homo sapi n

<220>
 <221> misc feature
 <222> (1)...(740)
 <223> n = A,T,C or G

<400> 17
 gtgagugcca ggcgtccctc tgcctgccc ctcagtggca acacccggga gctgttttgt 60
 ccttttgtga ggcctcagag ttccctcttt uagaactcac tgcacagag cctgacagg 120
 agccaccatg cagtgtctca gcllcattaa gaccatgatg atcctcttca atttgclcat 180
 ctllctgtgt gqbgcagccc tgttggcagt gggcatctgg gtgaccaatg atgggggcatc 240
 ctttctgaag atcttcgggc cactgtcgtc cagtgccatg cagtttgtca acgtgggcta 300
 ctloctcctc gcagccqagc ttgttggtctt tgccttgggt ttccctgggt gctatgggtg 360
 taagacggag agcagtggt cctcctgtgac gttcttcttc atcctcctcc tcactcllcat 420
 tgcagaagt gcagctgctg tggtcgctt ggtgtacacc acaatggctg aaccattcct 480
 gacgttgctg gtantgctg ccatcaanaa agattatggg ttcccaggaa aaattcactc 540
 aantntggaa caccnccatg aaaagggctc caatttctgn tggcttcccc aactatcccg 600
 gaattttgaa agantcnccc tacttccaaa aaaaaanant tgccttttnc cccnttctgt 660
 tgcaatgaaa acntcccaan acngccaatn aaaacotgcc cnnncaaaaa gntcncaaa 720
 caaaaaant nnaagggttn 740

<210> 18
 <211> 802
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(802)
 <223> n = A,T,C or G

<400> 18
 ccgctgggtt cgcctggcca gngnagccac gaagcacgtc agcatacaca ggcctcaatca 60
 caaggtcttc cagctgccgc acattacgca gggcaagagc ctccagcaac actgcataatg 120
 ggatacaott tacttttagca gccagggtga caactgagag gtgtogaagc ttattcttct 180
 gaccototgt tagtggagga agattccggg cttcagctaa gtatgcagcg tatgtcccat 240
 aagcaaacac tgtgagcagc cgggaagtag aggcacaagtc actctcagcc agctctctaa 300
 cattgggcot gtccagcagt tctccaaaca cgtagacacc agngggctcc agcacctgat 360
 ggatgagtgt ggcacgcgt gcucccttgg ccgacttggc taggagcaga aattgctcct 420
 ggtttctgcc tgtcaccttc acttcgcgac tcatcactgc actgagtgtg ggggacttgg 480
 gctcaggatg tccagagagc tggttccguc ccttuncetta atgacacccn ccanncaacc 540
 gtcggctcuc gccgantgng ttctgtoginc clgggclcagg gctgtgtggt cncctcltgc 600
 aancclctgc nggcccattg aatlcacnnc accggaacln gtanqatcca ctntclctat 660
 aaccgqncgc caccgcnntt ggaactccac tclntclncc tttacttgag ggttaagggc 720
 accctttncc ttaccttggt ccaaaccntn cntgtgtgag anatinglnaa tcnngnccna 780
 tnccancnnc atangaagcc ng 802

<210> 19
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 19
 cnaagcttcc aggtnacggy ccgcnaancu tgaccunagg tancanaang cagnungcgg 60
 gagccuacog tcaugnggnq gnqtctttat nqgagggggc ggagccacat cncctggaent 120
 cntgacccca acfcccncnc ncnanlqua gtgtatgagt cagaactgaa ggtnacgtgg 180
 caggaaucaa gancasannc tgcctcnnntc caagctcggcn naggagggcg ggclggccac 240
 gencateent cnegtgtctg aaagccccnn cctgtctact tgtttggaga acngcnnngy 300

catgccagc	gttanatcac	nggcngcgag	tnantttgcc	tctcccttcc	ggctgcgcac	360
cnggtntgct	tagnggacat	aacctgacta	cttaactgaa	cccnngaato	tnccnccct	420
ccactaagct	cagsacaaaa	aaattcgaca	ccactcantt	gtcacctgnc	tgotcaagta	480
aagtgtaccc	catncccaat	gtntgctnga	ngctctgncc	tgcnttangt	tgggtcctgg	540
gaagacctat	caattnaagc	tatgtttctg	actgcctctt	gctccctgna	acaancnacc	600
cnnctntcca	aggggggggc	ggcccccaat	ccccccaacc	ntnaattnan	tttanccccc	660
cccccmggcc	cgccctttta	cnancntcnn	nnacngggna	aaaccnnngc	tttncccaac	720
nnaatccccc	t					731

<210> 20
 <211> 754
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) . . . (754)
 <223> n = A, T, C or G

<400> 20						
tttttttttt	tttttttttt	taaaaacccc	ctccattnaa	lgnaaacttc	cgaatttgtc	60
caaccccttc	ntccaaatnn	ccntttccgg	gnngggggttc	caaacccaan	ttanttttgg	120
annttaaat	aaatnttont	tggnggnnna	anccnaatgt	nangaaagtt	naaccacata	180
tnancitnaa	tnccctggasa	cngtngntt	ccaaaaatnt	ttaaccetta	antccctccg	240
aaatngttna	nggaaaaacc	aantttctnt	aaggttggtt	gaaggntnaa	tnaaaaaccc	300
nnccaatgt	tttngccac	gcctgaatta	attggtttcc	gntgttttcc	nttaaaanaa	360
ggnnancccc	ggttantnaa	tccccccnnc	cccaattata	ccganitttt	ttngaattgg	420
gancccnogg	gaattaacgg	ggnnnttccc	tnttgggggg	cnggnncccc	ccccntccgg	480
ggttngggnc	aggnccnaat	tgtttaaggg	tccgaaaaat	ccctccnaga	aaaaaanctc	540
ccaggttgag	nttnggggtt	nccccccccc	cangggccct	ctcgnanagt	tgggttttgg	600
ggggccctgg	attttttttc	ccctntttnc	tccccccccc	ccnqgqanaq	aggttngngt	660
tttgnctnnc	gycccccncn	aaanattttt	ccganittnan	ttaaatccnt	gcctnggcga	720
agtcnlttqn	agggntaann	ggccccccnn	cggg			754

<210> 21
 <211> 755
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) . . . (755)
 <223> n = A, T, C or G

<400> 21						
atcancccat	gaccccnacc	nngggacccc	tcancgggnc	nnnccnaccnc	cgcccnatca	60
nngtnagnc	actncnnttn	natacncccc	cnccnactac	gcccncnanc	cnacgcncata	120
nnccanctnc	actganngcg	cgangtngan	ngagaaanct	naleccanag	ncaccanacn	180
ccagctgtcc	nanaangcct	nnnatacngg	nnnatccaat	ntgnanccctc	cnaagtattn	240
nnccnccanct	gattttcccln	anccgcttcc	ccntnccccc	lanccctccc	cccccaacna	300
cgaaggcnc	ggncconaagg	nnccgncncc	ccgctaghtc	cccnncaggt	cncnccncta	360
aaactcncnc	nal.lacncgc	tlcol.gagta	ccactccccc	aatctcacc	tactcaactc	420
aaacaaatcn	gatacccaat	actnccagcc	tgnttatnac	actntgactg	ggtctctatt	480
ttcnggggtcc	ntnaancntc	ctaatacttc	cagtctnccct	tcnccaattt	ccnaanggct	540
cttctngaca	gcantttttg	gtcccccntt	gggttcttan	ngaattgccc	ttcntngaac	600
gggctcntct	tttcccttgg	ttanccctgg	ttcncccgcc	cagttattat	ttcccntttt	660
aaattctntc	cntttanttt	tggcnttcna	aaacccccgc	cttgaaaaag	gccccctggt	720
aaaaggttgt	tttganaaaa	tttttgcttt	gtcc			755

<210> 22
 <211> 849
 <212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(849)

<223> n = A,T,C or G

<400> 22

tttttttttt	tttttangtg	tngtcgtgca	ggtagaggct	tactacaant	gtgaanacgt	60
acgctnggan	taangeagacc	cgantttctag	ganncnccct	aaaatcanac	tgtgaagatn	120
atcctgnnna	cggaanggtc	accggungat	nntgctaggg	tgnccnctcc	cannncnttn	180
cataactcng	nggccctgcc	caccaccttc	ggcgcccong	ngncogggcc	egggtcattn	240
gnnttaacn	cactnnngca	ncggtttccn	ncccnncng	accnnggcca	tccggggtnc	300
tctgtcttcc	cctgnagncn	anaaantggg	ccnccgnccc	ctttaccctt	nnacaagcca	360
engccnteta	ncnccngccc	ccctccant	nngggggact	gccnanngt	ccgttncctng	420
nnacucvnnn	gggtncctcg	gttgtogant	cnaccgnang	ccanggatc	cnaaggaaag	480
tgcgltnttg	gccccatccc	tctcctncgg	nnccaccttc	ccgaacnanga	ncegctcccg	540
cncnnngnng	cctcncctcg	caacacccug	netctctcngt	nuggnncccc	ccccaccgc	600
ncctcncnc	ngncgnannc	ctcncncnc	gtctcannca	ccaccccccc	ccgccagggc	660
ntcancacn	ggnnagacnn	nagcncnttc	gcncgcgcgc	gcgnccccct	cgcncngaa	720
ctnctcngg	ccantnncgc	tcaancnna	cnaaaagccc	ctgcgcgcgc	cgnagccncc	780
ncctcncnca	gtcctcccg	ctccnaccn	angnttccn	cgaggacacn	nnaccccgc	840
nnccngcgg						849

<210> 23

<211> 872

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(872)

<223> n = A,T,C or G

<400> 23

gcgcasaacta	tacttctctc	gnactcgtgc	gcctcgtctc	tcttttctctc	cgcacccatg	60
tctgacnanc	ccgattnggc	ngatctcnan	aagntcgcnc	agtccaaact	gantaacaca	120
cacacnncan	aganaaatcc	nctgccttcc	anagtanacn	attgaacnng	agaaccangc	180
ngcgaaactcg	taatnaggcg	tgcgcgcgca	atntgtcncc	gtttattntn	ccagctcnc	240
ctnccnaecc	taontcttcn	nagctgtcnn	acccctngtn	cgnacccccc	naggctcgga	300
tccgggttttn	nttgaccgng	cnnccctcc	ccccntccat	nacganccnc	ccgcacccacc	360
nanngcncgc	nceccgnct	cttcgcncnc	ctgtcctntn	ccccgtngc	ctggcncngn	420
accgcattga	ccctcgcnn	ctnccngaaa	ncgnanacgt	ccgggttggn	annancgctg	480
tgggnnngcg	tctgcncgc	gttccctccn	nccncttcca	ccatcttcnt	taonggggtct	540
ccnccgcctc	tccnnccnc	cctgggagcg	tntcctntgc	cccccttnac	tccccccctt	600
cgnccgtgnc	cgncccccac	ntcatttnc	nacgntcttc	acaaannccct	ggntnnctcc	660
cnancngncn	gtcancncag	qqaaggqngg	ggnnccnntg	nttgacgctg	nggnganctc	720
cgaanantcc	tccnctccan	cncctccctt	cgggcgnct	ctcngttncc	aacctlancaa	780
ntctccccc	ngngcncntc	tccagccclnc	ccncccccnc	ctctgacnctg	tncctctgctc	840
tnaccnnlac	ganltatcg	cncctctctt	cc			872

<210> 24

<211> 815

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(815)

<223> n = A,T,C or G

<400> 24

gcctgcaagc	ttgagkatto	tatagngtca	cctaaatanc	ttggcntaat	catgggtcnta	60
netgnettcc	tgtgtcaaat	gtatacnaaa	tanatatgaa	tcfnatntga	caagannkla	120
tctnccattt	gtcccaantq	tnntgtccat	cctgtcngan	canattcccc	tnnattncgn	180
cgccttcccc	gncantaln	taattgggaa	ntcnntnnn	ncacccnccat	ctatctntcc	240
gncacctgac	lggnagagat	ggatnatttc	lnntntgacc	ncatgtttca	tcttggatln	300
aananccccc	cggngncccc	cgggttngng	cnagccnntc	ccaagacctc	ctgtggaggt	360
aacctggctc	agannccatc	aaontgggaa	accccgcncc	angtnnaagt	ngnnncanbn	420
gatcccgctc	aggnttnacc	atcccttchc	agcgcccttc	ttngtgcttt	anagngnagc	480
gtgtccnanc	cnctccacat	ganaccgccc	agncanccg	caattnggca	caatgtcgnc	540
gaacccccca	ggggggnnta	tncaaanccc	caggattgtc	cnmcangaa	atcccccanc	600
ccncccttac	ccncttttgg	gacngtgacc	aantccccga	gtncacgtcc	ggcngncttc	660
ccccacoggt	nnccntgggg	gggtgaanct	cnngntcanc	cnngcagagn	ntcnaagga	720
accggnccctn	ggncgaanng	ancnntcnga	agngccnctt	cgtataaccc	ccctcncca	780
ncnncnngnt	agntcccccc	cngggtncgg	aangg			815

<210> 25

<211> 775

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> {1}... [775]

<223> n = A, T, C or G

<400> 25

ccgagatgtc	tgcgtccgtg	gccttccgtg	tgcgtccgtc	acacacacac	tctggcctgg	60
aggttatcca	gcgtacacca	aagattccag	tttactcacg	tcatcccgca	gagaatggaa	120
agtcaaatit	cccggaattg	tatgtgtctg	ggtttccatc	atccgacatt	gaanttgact	180
tactgaagaa	tgganagaga	attgaaaaag	tgagacattc	agacttgtct	ttcagcaagg	240
actgtctctt	ctatctcttg	tactacactg	aattcacccc	cactgaaaaa	gatgagtatg	300
cctgccgtgt	gaaccatgtg	actttgtcac	agcccaagat	agttaagtgg	gatcgagaca	360
tgtaagcagn	cnncatggaa	gtttgaagat	gcgcgatttg	gattggatga	attccauatt	420
ctgcttgcct	gcnttttaat	antgatatgc	ntatacacc	taccctttat	gncccccnaat	480
tgtagggggt	acatnangtt	tcnontngga	catgatcttc	ctttataant	ccnccnttcg	540
aattgcoggt	cnccngtttn	ngaattgttc	cnnaaccacg	gttgggtccc	ccaggtcncc	600
tcttacggaa	gggcctgggc	cncttttcaa	gggtggggga	acnnaaaatt	tcnctltatc	660
cncccccncn	cnntcttgng	nnncancttt	gggaaccttc	cnattccctc	tgccctcnna	720
nccttnccta	anccaaactn	ccnccnglnc	naaannlttn	actlcccccc	tcacc	775

<210> 26

<211> 820

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> {1}... (820)

<223> n = A, T, C or G

<400> 26

anattantac	agtgtaatct	tttcccagag	gtgtgtanag	gggaacggggc	ctagagggcat	60
ccanagata	ncctatanca	acagtgcctt	gaccaagagc	tgttgggcac	atttccclqa	120
gaaaagggtg	cgggtcccat	cactctctct	ctcccatagc	catcccgagc	gggtgagtag	180
ccatcangcc	ttgggtggga	gggagtcang	gaacaaacan	acccagagagc	anacagaccc	240
ntgatgacca	tgggcgggag	cgaacctctt	ccctgnaccg	gggtggcane	nganagccta	300
netgaggggt	cacactatac	acgttaccga	ccnagalnan	caacclqctc	aagtgacccc	360
ttcctacctg	acnaaccagc	acnnaaaact	gcngcctggg	gacagcncctg	ggancagcta	420
acnnaagcact	ccclgcctcc	cccatggcng	tnccntcccc	tggtccclgnc	aagggaagct	480
ccctgttgga	attncgggga	naccaaggga	ccccccctct	ccanctgtga	aggaasaann	540
gatgggaalt	lnccttcccg	gccnntcccc	tcttccctta	caagcccccct	nttactcttc	600
lccctctntc	ntcctgncnc	acttttnacc	ccnnnatttc	ccttnattga	tggannctn	660

ganattccac tnngeectnc ontenateng naanacnaaa naetntetna ccnggggat 720
 gggneecteg nteatectet ctttttencel accnecnttt ctttgectet cctingatec
 780 tccaaacnte gntggcentn ccccccnnn tcecttneec
 820

<210> 27
 <211> 818
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(818)
 <223> n = A,T,C or G

<400> 27
 tctgggtgat ggcctottee tectcaggga cctctgactg ctctgggcca aagaatctct 60
 tgtttcttct ccgagoccca ggcagcgtg attcagcctt gcccaacctg attctgatga 120
 ctgoggatgc tgtgacggac ccaaggggca aatagggtcc cagggtccag ggaggggcgc 180
 ctgctgagca cttccggccc tcacccctgc cagcccccgc catgagctct gggctgggtc 240
 tcggcctcca gggttctgct cttccangca ngccancaa gggcgtggg ccacactggc 300
 ttcttctgc cccntccctg gctctgante tctgtcttcc tgtcctgtgc angenccttg 360
 gatctcagtt tccctcctc anngaaactct gtttctgann tcttcantta actntgantt 420
 tatnaccnen tggnetgtnc tgtcnnaett taatgggcon gaccggctaa tccctccctc 480
 nctcccttcc anttonnnna accngcttnc cntctctcc ccntancccg ccnggggaac 540
 ctcccttgcc ctncaccang gconnnaccg cccnlnnctn ggggggcnng gtnnctnnc 600
 ctgntnnecc cncctcnncn tccctcgctc cncnncgc nngcannctc nngtcccn 660
 tnnctcttcn ngntctgnaa ngntcnctn tnnnnngnch ngntnlnen tccctctenc 720
 cnnnlgnang lanttnnnnc ncnngncccc nnnnccnnnn nggnantnch tctnncngc 780
 cccnnccccc ngnatteagg cctccnntct ccggccnc 818

<210> 28
 <211> 731
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(731)
 <223> n = A,T,C or G

<400> 28
 aggaaggcgc gagggatatt gtangggatt gagggetagg agnataangg gggagggtgtg 60
 tcccaacatg anggtgnngt tctcttttga angaggggtg ngtttttann ccnggtgggt 120
 gattnaaccc cattgtatgg agnnaaaggn tttnagggat ttttcggctc ttatcagtat 180
 ntanattcct gtnaatcgga aaatnatntt tcnnccnggaa aatnttgctc ccatccgnaa 240
 attnctcccg ggtagtgcac nttngggggn cngccangtt tcccaggctg ctanaatcgt 300
 actaaagntt naagtgggan tncaaatgaa aacctnncac agagnatccn taccogactg 360
 tnnnttncct tcgcccctng actctgcnn gacccaatac ccnngngnat gtccccngn 420
 nnnccgnnc tgaaannnnn tcngggctnn gancatcang gggcttcgca tcaaaagcnn 480
 cgtttcncat naaggcaett tngcctcacc caaccnctng cctcnncca tttngccgtc 540
 nggttncct acgctnnng cncctnnntn ganattttnc ccgctnggg naancctcct 600
 gnaatgggta gggnetntc ttttnaccnn gnggtntact aatcnnctnc acgctnctc 660
 tetnaccccc ccccttttt caatcccanc ggcnaatggg gtctcccnnn ogangggggg 720
 nnnccannnc c 731

<210> 29
 <211> 822
 <212> DNA
 <213> Homo sapien

<220>

<221> misc feature
 <222> (1)...(822)
 <223> n = A,T,C or G

<400> 29

actagtcacag	tgtggtggaa	ttccattgtg	ttggggmenc	ttctatgant	antnttagat	60
cgctcanacc	tcacancctc	ccnacnangc	ctataangaa	nannaataga	notgtncnnt	120
atntntacnc	tcatanncct	cnnnacccac	tcctctttaa	ccntactgt	gcctatngcn	180
tnctantct	ntgcgcctn	cnanccacn	gtgggcnac	cnenngnatt	ctenatctcc	240
tcnccatntn	gcctananta	ngtncatacc	ctataccctac	nucuatgctc	nnnctaanen	300
tcctnanlt	annnlaucta	ccactgacnt	ngaettctnc	atnancctct	cttllgaatc	360
tactctgact	cccacngcct	annnattagc	anctlccccc	nacnatntct	caacccaatc	420
ntcaaccccc	ctctctancg	ltcnccaaac	nttncctccg	ctcccnnac	ccccccctc	480
ccaastaccc	ncacactgac	ncctaacccn	cacctcccg	gcaagccnec	ggncatttan	540
cccttggaat	cacnatngga	naaaaaaaac	cchaaetctc	tanencnmat	ctccctaana	600
aatnctctn	naatttactn	ncantnccat	caanccracn	tgaacnnaa	ccccgtttt	660
tanatccctt	ctttcgaaaa	ccnacccttt	anncccaac	ctttngggcc	ccccnctnc	720
ccnaatgaag	gncncccaat	cmangaaacg	nccttgaaaa	ancnaggcna	anannntccg	780
canatccctat	cccttanttn	ggggncctt	nccnngggcc	cc		822

<210> 30
 <211> 787
 <212> DNA
 <213> Homo sapien

<220>

<221> misc feature
 <222> (1)...(787)
 <223> n = A,T,C or G

<400> 30

cgccgcctg	ctctggcaca	tgcctcctga	atggcatcaa	aagtgatgga	ctgcccattg	60
ctagagaaga	ccttctctcc	tactgtcatt	atggagccct	gcagactgag	ggctcccctt	120
gtctgcagga	tttgatgtct	gaagtctgtg	agtgtggctt	ggagctcctc	atctacatna	180
gctggaagcc	ctggaggggc	ttctctcgca	gcctcccctt	ttctccacgc	ctctccangg	240
acaccagggg	ctccaggcag	cccattatto	ccagnangac	atggtgttct	tcacgcggga	300
cccatggggc	ctgnaaggcc	agggtctcct	ttgacacccat	ctctcccgtc	ctgctggcca	360
ggcgtggga	tcactanttt	ctanaacggc	cgccaccncc	gtgggagctc	cagcttttgt	420
tcctntaat	gaaggttaat	tgcncgcttg	ggtaatcat	nggtcanaac	tnnttctgt	480
gtgaaattgt	ttntcccctc	ncnatccnc	ccnacatacn	aacccgggan	cataaagtgt	540
taaagccctg	gggtngcctn	nngaatnaac	tnaactcaat	taattgcgtt	ggtcctgggc	600
ccgctttccn	ttcnggaaac	ctgtctctcc	ctgcttntnt	gaatcgccca	ccccccnggg	660
aaaagcgall	lgctttttng	qgggtctctt	ccctctccc	ctctctaan	ccctnccctt	720
ccgctgttnc	nggtngcggg	gaanggggat	nnnclccncc	naagggggng	agnnngntat	780
ccccaaa						787

<210> 31
 <211> 799
 <212> DNA
 <213> Homo sapien

<220>

<221> misc feature
 <222> (1)...(799)
 <223> n = A,T,C or G

<400> 31

tttttttttt	tttttttggc	gatgctactg	tttaattgca	ggaggtgggg	gtgtgtgtac	60
catgtaccag	ggtctattaga	agcaagaaag	aaaggaggag	ggcagagcgc	cctgctgagc	120
aaacaaaggac	lccctcagcc	ttctctgtct	gtctcttggc	gcaggccacat	ggggaggcct	180
cccguaaggt	ggggggcccc	agtccagggg	tgggagcaat	acanggggtg	ggagtgggtg	240
qtgctgtgln	cnaatggcct	uncananaac	cctacgcltc	ttgacacctg	gatttcaacc	300

ggggaccttc	tgttctccca	nggnaacttc	ntnnatctcn	aaagaacaca	actgtttctt	360
cngcanttct	gggtgttcat	ggaaagcaca	ggtgtccnat	ttnngctggg	acttggtaca	420
tatggttccg	gcccacotct	cccntcnaan	aagtaattca	ccccccccc	ccntctnttg	480
cctgggccc	taantaccca	cacoggaaot	canttanitta	ttcatcting	gntgggcttg	540
ntnatcnccn	cctgaangcg	ccaagttgaa	aggccaogcc	gtcccccttc	cccatagnan	600
nttttncnt	canctaattc	ccccccnggc	aacnatacaa	ccccccccc	tggggggccc	660
agcccanggc	ccccgnetcg	ggnnnccngn	cncgnantcc	ccaggntctc	ccantcngne	720
ccnnngccc	cccgcaogca	gaacanaagg	ntngagccnc	cgcaunnnnn	nggttncnac	780
ctcgccccc	ccnnccngng					799

<210> 32
 <211> 789
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc feature
 <222> (1) ... (789)
 <223> n = A, T, C or G

<400> 32						
tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tttttncnag	ggcagggtta	ttgacaacct	cncgggacac	aancaggctg	gggacaggac	120
ggcaacaggc	tccggcgggc	gcggcgggcg	ccctacctgc	ggtaccaa	ntgcagcttc	180
cgtcccgct	tgatnttcc	ctgcagctgc	aggatgccnt	aaaacagggc	ctcgccntn	240
ggtgggcaac	ctgggatttn	aatttccaog	ggcacaatgc	ggtcgcaanc	cctcaccacc	300
nattaggaat	agtgtnttta	ccnccncccg	ttggcncact	ccccntggaa	accacttntc	360
gcggctccgg	catctggtct	taazcccttg	aaacnctggg	gccctctttt	tggttantnt	420
ncngccaca	atcatnactc	agactggcnc	gggttgccc	caaaaaan	ccccaaaa	480
ggncatgtc	ttncggggt	tgttgmata	tncaacact	ccggggcnc	ncaggacac	540
ccaaagttc	ttgnggccc	caaaaaanct	ccggggggnc	ccagtttcaa	caaagtcac	600
cccllggc	cccaaatcct	ccccccgntt	nctgggtttg	ggaacccacg	cctctnncct	660
tggngggcaa	gntggntccc	ccttcggggc	cccggtgggc	ccnctctaa	ngaaaaancc	720
ntcctnncca	ccatcccccc	nnnnnacgnc	tancaangna	tccctttttt	tanaaacggg	780
ccccccnag						799

<210> 33
 <211> 793
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc feature
 <222> (1) ... (793)
 <223> n = A, T, C or G

<400> 33						
gacagaaac	gttggttgg	ggagcaccct	tctatacgac	ttacaggaca	gcagatgggg	60
aati.calgc	tgttgagca	atanaacccc	agttctacga	gctgctgatc	aaaggacttg	120
gaetaaagtc	tgatgaactt	cccaatcaga	tgagratgga	tgattggcca	gaaatgaana	180
agaagtttgc	agatgntatt	gcbaagaaga	cgaaggcaga	gtggtgtcaa	atctttgacg	240
gcacagatgc	ctgtgtgact	ccggttctga	cttttgagga	ggttgttcat	catgatcaca	300
acaangaacg	gggtctggtt	atcaccantg	aggagcagga	cgtgagcccc	cgccctgcac	360
ctctgctgtt	aaacaccccc	gccatccctt	ctttcaaaa	ggatccacta	cttctagagc	420
ggncgccacc	gcgggtggagc	tccagctttt	gttcccttta	gtgaggttta	attgcgcgct	480
tggcgtaate	atggtcatan	ctgtttccctg	tgtgaaattg	ttatccgctc	acaattccac	540
acaacatacg	anccggaagc	atnaaatttt	aaagcctggg	ggtngcctaa	tgantgaact	600
nactcacatt	aattggcttt	gcgctcaactg	cccgctttcc	agtcgggaaa	acctgtccct	660
gccagctgcc	nttaatgaat	cnggcacccc	cccggggaaa	aggcngtttg	cttnttgggg	720
cgcncctccc	gctttctcgc	ttcctgaant	ccttcccccc	ggtctttcgg	cttgcggcna	780
acggtatcna	cct					793

15

<210> 34
 <211> 756
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1) ... (756)
 <223> n = A, T, C or G

<400> 34
 gccgcgacccg gcaatgtacga gcaactcaag ggcgagtgga accgtaaaag ccccaatctt 60
 ancaagtggg gggaanagct ggggtogactc aagctagtgc ttctggagct caacttcttg 120
 ccaaccacag ggaaccaagct gaccaaaacag cagctaattc tggcccgtag catactggag 180
 atcggggccc aatggagcat cctacgcaan gacatccctt ccttcgagcg ctacatggcc 240
 cagctcaaat gctactactt tgattacaan gacgagctcc ccgagtcagc ctatatgcac 300
 cagctcttgg gctcaaacct cctcttctctg ctgtcccgaga accgggtggc tgantnccac 360
 accganttgg anoggttggc tggccaanga catacanacc aatgtctaca tcnaccacca 420
 gtgtctctgga gcaatactga tggangggcag ctaccncaaa gtnttctctg ccnagggtaa 480
 catcccccgc cgagagctac accttcttca ttgacatctt gctcgacact atcagggatg 540
 aaaaatgcng ggttgctcca gaaaggctnc aanaanatcc ttttctctga aggcccccgg 600
 atnctctagt nctagaatcg gcccgcacac ggcgttganc ctccaaacct tcgttacct 660
 ttaetgaggg tlnattggcg ccttggcggt tatcatgggc acnccngttn cctgtgttga 720
 aktlnliaac ccccccacat tccacgcena caktng 756

<210> 35
 <211> 834
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1) ... (834)
 <223> n = A, T, C or G

<400> 35
 ggggatctct anactnacct gnatgcattg ttgtcggtgt ggtcgctgtc gatgaanatg 60
 accaggctct tgccttqaa gctctcggtt gctgtnttta agttgctcag tctgccgtca 120
 tagtcagaca cnotcttggg caaaaaacaa caggatntga gtcttgattt caccctccat 180
 aatcttcnng gctgtctgct cgggtgaactc gatgaanag qccagctggt tgtgtntgat 240
 aaantccanc angttctctt tgggtgaccc ccttcaaaag ttgttcgggc ctctcatcaa 300
 cttctnnaan angannancc canctttgtc ggcgtgggat lgganacaa cgtcctgtt 360
 ggaaactgat cccaaatggt atgtcatcca tgcctctgtr tgcctgcgaa aaacttgctt 420
 ggcncaaate cgaactcccn tcttgaagag aagccnatca cccccccctc cctggactcc 480
 nncaangact ctncgcctnc cccntccnng cagggttggg ggcannccgg gccentgcgc 540
 ttcttcagcc agttcacnat ntcatcagc cctctcgcca gctgtntat tcttggggg 600
 ggaanccgtc tctccttcc tgaannaact ttgacogtng gaatagccgc gentcnccnt 660
 acntnctggg ccgggttcaa antccctccn ttgcnntcn cctcgggcca ttctggattt 720
 nccnaacttt ttccttccc cncnccnng ngtttgntt ttctatnggg ccccaactct 780
 gctnttggcc antccctgg gggcnntan cncnccntnt ggtcccntng ggcc 834

<210> 36
 <211> 814
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1) ... (814)
 <223> n = A, T, C or G

<400> 36

cggnccgcttt	ccngcccgccg	cccgttttcca	tgacnaaggc	tcccttcang	tlaaatacnn	60
cctagnaaac	attaatgggt	tgtctacta	atacatcata	cnaaccagta	agcctgccca	120
naacgccaac	tcaggccatt	cctaccaaag	gaagaaaggc	tggctctctc	acccccigta	180
ggaagggcct	gccttgtaag	acauccacaat	ncggctgcat	ctnaagctct	gtgttttact	240
aatggaaaca	aaataaaca	aanaggtttt	gtlctcatgg	ctgcccaccg	cagcctggca	300
ctaaaaacanc	ccagcgutca	cttctgcttg	ganaaatatt	ctttgctctt	tgggacatca	360
ggcttgctgg	talcaactgc	acntttccac	ccagctgggc	nccttcccc	catntttgtc	420
anlganctgg	gaagcctgaa	ncctagctct	caaaagctct	ngcccacaag	accggccacc	480
agggggangtc	ntttncagtg	gctclgccc	anantaccn	tctctcnn	gaataaaaaag	540
gcccclgac	ganatgcttc	cancancctt	taagaccat	aatcctngaa	ccatgggtgc	600
cttcgggtct	gatccnaaag	gaatgttctt	gggtcccant	cctcctttg	tttctttagt	660
tgtnttggac	ccntgctngn	atnaccnaan	tganatcccc	ngaagcacc	tncccttggc	720
atttganttt	cntaaattct	ctgccttact	ncgaaagca	cnattccctn	ggcncnnaan	780
ggngaactca	agaaggctctn	ngaaaaacca	cnctn			814

<210> 37
 <211> 760
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(760)
 <223> n = A, T, C or G

<400> 37						
gcctgctgct	ctlctcctaaa	gttcttctctg	ttggccatcac	aaccaccata	ggtaaagcgg	60
gcctcagtgct	cgtctgaagg	gttctagtag	cagcgcggga	tgtctctctt	gcagagtcct	120
gtgtctggca	ggctcccgca	atgccccttg	tacttgggga	aatggatgag	ctggagctcg	180
tcnaancac	tngtgtattt	ttcaccangca	gcctcctccg	aagcttccgg	gcagttgggg	240
gtgtcgtcac	actccactaa	actgtcgatn	cancagccca	ttgttgcagc	ggaactgggt	300
gggctgacag	gtgccagaac	acactggatn	ggcctttcca	tggaaaggcc	tgggggaaat	360
cncctnanc	caaactgcct	ctcaaaaggcc	accttgcaca	cccgcacagg	ctagaaatgc	420
actcttcttc	ccaaaggtag	ttgttcttgt	tggccaaaga	ncctccanca	aaccaaaanc	480
ttgcaaaatc	tgtctcgtgg	gggtcatnnn	taccanggtt	ggggaaanaa	accggcngn	540
ganccnccct	gtttgaatgc	naaggnaata	atcctcctgt	cttgccttgg	tggaaanagca	600
caattgaact	gttaacnttg	ggcngngtct	cncctngggg	gtctgaact	actcaccgtc	660
actggaaaaa	ggtangtgcc	ttccttgaat	tcccaaatct	ccctngntt	tgggttnttt	720
ctcctctncc	ctaaaaatcg	ttttccccc	cctangggc			760

<210> 38
 <211> 724
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(724)
 <223> n = A, T, C or G

<400> 38						
tttttttttt	tttttttttt	tttttttttt	tttttaaaaa	ccccctccat	tgaatgaaaa	60
cttccnaaat	tgtccaaacc	cctcnnccaa	atnnccattt	ccgggggggg	gttccaaacc	120
caaattaatt	ttgganttta	aattaaatnt	tnattngggg	aaanaancac	atgtnaagaa	180
aatttaaccc	attatnaact	taaatnccn	gaaccccttg	gnttccaaaa	atttttaacc	240
cttaaatccc	tccgaaattg	ntaanggaaa	accaaattcn	cctaaggctn	tttgaagggt	300
ngattttaaac	ccccctnant	ctttttnacc	cnnngctnaa	ntatttngnt	tccgggtgtt	360
tccntttaan	cntnggtaec	tcccngtaat	gaannnccct	aanccaatta	aaccgaattt	420
tttttgaatt	ggaaattccn	ngggaattna	ccgggggttt	tcccttttgg	gggcctalnc	480
cccnctttcg	gggtttgggn	ntagggttgaa	ttttttnang	nccccacaaa	ncucccaana	540
aaaaaactcc	caagntttta	ctngaatntc	ccccctccca	ggccttttgg	gaaggngggg	600
tttntgyggg	ccngggantt	cnlccccc	ttncnncccc	ccccccnggt	aaanggttat	660

ngnnttttgggt ttttggggccc ctttannnggac ctcccggtatn gaaattaaat ccccggggncg 720
gcgg 724

<210> 39
<211> 751
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(751)
<223> n = A, T, C or G

<400> 39
tttttttttt tttttctttg ctcccaattt atttttattt tgattttttt taatgctgca 60
caacacaata ttatlllcat ttgtttcttt tttttcattt tttttgtttg ctgctgctgt 120
tttattttatt tttactgaaa gtgagagggg acttttgttg ctttttttcc tttttctgta 180
ggcggcctta agttttctaa atttggaaca tctaagcaag ctgaanggaa aagggggttt 240
cgcaaaatca ctggggggga nggaaaggtt gttttgttaa tcatgcccta tgggtgggtga 300
ttaactgctt gtacaattac ntttcacttt taattaattg tgctnaange ttaattana 360
cttggggggt cctcccccac accaaccrcn ctgacaaaaa gtgccngccc tcaaatnatg 420
tcccggcnnt cnttgabaca cactgcngaa ngttctcatt ntcccnccnc caggtnaaaa 480
tgaagggtta ccatntttta cncacactcc acntggcnnn gcttgaatcc tcaaaanncn 540
cctcaaanen aatttctnng ccccggtcnc gctnnngtcc cncccgggtc cggggaantn 600
caccoconga annccntnnc naacnaaatt ccgaaaatat tcccnntcnc tcaattcccc 660
cnnagactnt cctcnncnan cncaattttc tttntntcac gaacncgnnc cnaaaatgn 720
nnnnenccte cctngtccn naatcnccan c 751

<210> 40
<211> 753
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(753)
<223> n = A, T, C or G

<400> 40
gtggtatttt ctgtaagatc aggtgttctt cctctgtagg tttagagga acaaccctcat 60
agatgaaaac ccccccggga cagcagcaat gcaactgcca agcagccggg qlaggagggg 120
cgccctatgc acagctgggc ccttgagaca gcagggtctt gatgtcaggc tcatgtcaa 180
tgggtctggaa gggcggtgtg tacttgogta ggggacacac gtccggggccc accaggaact 240
tctcaaagtt ccaggcaacn tegttagcag acacgggaga ccagggtgatn agcttgggggt 300
cggtcataac cggcggtggc tegtugctgg gaggctggcag ggcttcccgc aggaaggcna 360
ataaaaggtg cggcccccga cgttccnct cgcacttctc naanaccatg angttgggct 420
cnaaccacac accanncggg acttccclga nggaattccc aaatctcttc gntcttgggc 480
ttctnctgat gcccctanctg gttgcccnngn atgccaancc nccccaancc cgggggtcct 540
aaanccaccc cctccclentt tcatclgggt tnttntcccc ygacontggt tectctcaag 600
ggancccata tctcnaccan tactcaacnt nccccccnt gnnacccanc cttctanngn 660
ttcccncccg nctclggcc cntcaaanen gcttnacna cctgggtctg ccttcccccc 720
tnccttatct gnaaccnccn tttgtctcan tnt 753

<210> 41
<211> 341
<212> DNA
<213> Homo sapien

<400> 41
actatatcca tcacaacaga catgcttcat cccatagact tcttgacata gcttcaaatg 60
agtgaaccca tccctgattt atatacatat atgttctcag tattttggga gcttccccac 120
ttctttaaac ctgttctatt atgaactctg aaaaatgga tttgtgaaga gttaaaaagt 180

tatagcttgt	ttacgtagta	agtttttgaa	gtctacattc	aatccagaca	cttagttgag	240
tgtaaactg	tgatttttaa	aaaatatcat	ttgagaatat	tctctcagag	gtaftttcat	300
ttttactttt	tgattaattg	tgttttatat	attagggtag	t		341

<210> 42
 <211> 101
 <212> DNA
 <213> Homo sapien

<400> 42						
acttactgaa	tttagttctg	tgctcttctt	tatttctgtt	tgctatcctaa	ctactttgat	60
gtttcnaaca	ttctaaataa	ataattttca	gtggcttcac	a		101

<210> 43
 <211> 305
 <212> DNA
 <213> Homo sapien

<400> 43						
acatctttgt	tacagtctaa	gatgtgttct	taaatacaca	ttccttctctg	gtctctaccc	60
tccagggtgg	tctcacactg	taattagagc	tattgaggag	tctttacagc	aaattaagat	120
tcagatgctt	tgctaagtct	agagttctag	agttatgttt	cagaaagtct	aagaaaccca	180
cctcttgaga	ggtcagtaaa	gaggacttaa	tatttcatat	ctacaaaatg	accaaggat	240
tggatacaga	acgagagtta	tcctggataa	ctcagagctg	agtacctgcc	cggggggcgc	300
tcgaa						305

<210> 44
 <211> 852
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (852)
 <223> n = A, T, C or G

<400> 44						
acataaatat	cagagaaaag	tagtctttga	aatatttaac	tccaggagtt	ctttgtttct	60
gattatttgg	tgtgtgtttt	ggtttgtgtc	caaagtattg	gcagcttcag	ttttcatttt	120
ctctccatcc	tggggcattc	ttcccaaat	tataaccag	tcttctgcca	tccacacgt	180
ccagaatttc	tctttttag	taatatctca	tagctcggt	gagcttttca	taggltacgc	240
tgctgttgtt	cttcttttta	ccccatagct	gagccactgc	ctctgatttc	aagaaacctga	300
agacgccttc	agatcggtct	tcccatttta	ttaatcctgg	gttcttgtct	gggttcaaga	360
ggatgtcgcg	gatgaattcc	cataagttag	tccctctcgg	gttqlacttc	ttggtgtggc	420
acttgcagg	gggtctttgc	tcctttttca	tatcaggtga	ctctgcacac	ggaaggtgac	480
tggtggllgt	catggagatc	tgagcccgcc	agaaagttct	gctgtccac	aaactactg	540
tgctacccta	gttggctgca	tataaatagt	tctnqtcttt	ccagggtgtc	atgatggaag	600
gctcagtttg	ttcagtcctg	acaactgact	tgtgtgttga	ctggaacagg	tcactactgc	660
actggccgtt	ccacttcaga	tgctgcaagt	tgctgtagag	gagntgcccc	gocgtccctg	720
ccgcccggtt	gaactcctgc	aaactcctgc	tgcaaaaggtg	ctcgcctgtg	atgtcgaact	780
cntggaaagg	gatacaattg	gcctccagct	ggttgggtgtc	caggaggtga	tggagccact	840
cccacacctg	gt					852

<210> 45
 <211> 234
 <212> DNA
 <213> Homo sapien

<400> 45						
acaacagacc	cttgcctcgt	aacgaacctca	tgctcatcaa	gttggacgaa	tccgtgttcc	60
agtctgacac	catccggagc	atcagcattg	cttcgcagtg	ccctaccgag	gggaactctt	120
gcctcgttcc	tggctggggt	ctgctgggga	acggcagaat	gcctaccgtg	ctgcagtgcc	180

tgaacgtgtc ggtgggtgtc gagggaggtc gcagtaagct ctatgaccgc ctgt 234

<210> 46
 <211> 590
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1)...(590)
 <223> n = A,T,C or G

<400> 46
 actttttatt taaatgttta taaggcagat ctatgagaat gatagaaaac atggtgtgta 60
 atttgatagc aatatttttg agattacaga gttttagtaa ttaccaatta cacagttaaa 120
 aagaagataa tatattccaa gcanatacaa aatatctaata gaagatcaa ggcaggaaaa 180
 tgantataac taattgacaa tggaaaaatca attttaatgt gaattgcaca ttatccttta 240
 aaagotttca aaanaanaaa ttattgcagt ctanttaatt caaacagtgt taaatgggat 300
 caggataaen aactgaaggc canaaagaat taattttcac ttcagttaac ncacccanac 360
 ttacaatggc ttaaatgcen ggaaaaagca gtggaagtag ggaagtanc aaggtctttc 420
 tggctcttaa tctgccttac tctttgggtg tggctttgat cctctggaga cagctgccag 480
 ggctcctgtt atatccacaa tcccagcagc aagatgaagg gatgaaaaag gacacatgct 540
 gccttccttt gaggagactt catctcactg gccaacactc agtcacatgt 590

<210> 47
 <211> 774
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1)...(774)
 <223> n = A,T,C or G

<400> 47
 acaagggggc ataataaagg agtggggana gattttaaag aaggaaaaaa aacgaggccc 60
 tgaacagaat tctcctgnac aacggggcct caaataaatt ttcttgggga ggttcaagac 120
 gcttcaactgc ttgaaactta aatggatgtg ggacanaatt ttctgtaatg acctgaggg 180
 cattacagac gggacclclgg gaggaaggat aacagaaaag gggacaaaag ctaatcccaa 240
 aacatcaaaag aaaggaaagt ggcgtcatat ctcouagcct acacagttct ccagggtct 300
 cctcaterct ggaggacgac aglqqaggaa caactgaca lqlccccagg ctctgtgtg 360
 ctggctcctg gtcttcagcc cccagctctg gaagencacn ctctgtgat cctggtggc 420
 ccacactcct tgaacacaca tccrcagggt atattcctgg acctggctga acctcatt 480
 cctacttccg agatgccttg ctccctgcag cctgtcaaaa tcccactcnc cctcuaaaac 540
 aaggcatggg aagcctttct gacttgctg attactccag catcllqaa caatccctga 600
 ttccccactc cttagaggca agatagggtg gttaagagta gggctggacc ccttggagcc 660
 aggtgtgtg cttaaaattn tggctcattt acgagctatg ggaccttggg caagtnatct 720
 toacttctat gggcmtcatt ttgttctacc tgcaaaatgg gggataataa tagt 774

<210> 48
 <211> 124
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc feature
 <222> (1)...(124)
 <223> n = A,T,C or G

<400> 48
 canaaattga aattttataa aaaggcattt ttctcttata tccalaaant gatataattt 60
 ttgcaantat anaastgtgt cataaattat aatgttctt saltacgct caacgcacat 120

tggt

129

<210> 49
 <211> 147
 <212> DNA
 <213> Homo sapien
 <220>
 <221> misc_feature
 <222> {1}...{147}
 <223> n = A,T,C or G

<400> 49
 gccgatgcta ctatttttatt gcaggagggtg ggggtgtttt tattattctc tcaacagctt 60
 tgtggctaca ggtgggtgtct gactgcattt aaaaattttt tacgggtgat tgcaaaaatt 120
 ttagggcacc catatcccaa gcaatgt 147

<210> 50
 <211> 107
 <212> DNA
 <213> Homo sapien

<400> 50
 acattaaatt aataaaagga ctgttgggggt tctgctaaaa cacatggctt gatattttgc 60
 atggtttgag gttaggagga gttaggcata tgttttggga gagggggt 107

<210> 51
 <211> 204
 <212> DNA
 <213> Homo sapien

<400> 51
 gtccatagga gtctagggga cacacgcttc tggggtcacg gggcgcgccc acttgcccg 60
 cgggaaggaa aggcagagaa gtgacacgt cagggggaaa tgacagaaag gaaaatcaag 120
 gccttgcaag gtcaaaaagg ggaactcagg ctccaccac agccctgcc cacttggcca 180
 cctccctttt gggaccagca atgt 204

<210> 52
 <211> 491
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{491}
 <223> n = A,T,C or G

<400> 52
 acaaagataa catctatctt ataacaaaaa ttgatagtt ttaaagggtt gtatttggta 60
 gggatlltc caaaagacta aagagataac tcaggtaaaa agttagaaat gtataaaaca 120
 ccatcagaca ggttttttaa aaacaacata ttacaaaatt agacaatcat ctttaaaaaa 180
 aaaaacttct gtatcaattt ctttctgtta aatgactga cttaantatt tttaaatatt 240
 tcaaaacac ttctcaaaa attttcaana tggtagcttt canatgtacc ctcagtccca 300
 atgttgetca gataaataaa tctcgtgaga acttaccacc caccacaagc tttctggggc 360
 atgcaacagt gtcttttctt tcttttttct tttttttttt ttacaggcac agaaactcat 420
 caattttatt tggataacaa aggggtctca aattatattt aaaaacaaat ccaagttaat 480
 atcaactctt t 491

<210> 53
 <211> 484
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(484)
 <223> n = A,T,C or G

<400> 53
 acataattta gcagggctaa ttaccataag atgctattta ttaanaggtn tatgatctga 60
 gtattaacag ttgctgaagt ttggtatttt tatgcagcat ttcttttttg ctttgataac 120
 actacagaac cottaaggac actgaaaatt agtaagttaa gttcagaaac attagctgct 180
 caatcaaatc totacataac actatagtaa ttaaaacgtt aaaaaaagt gttgaaatct 240
 gcactagtat anaccgctcc tgtcaggata anactgctt ggacagaaa gggaaaaanc 300
 agctttgant ttctttgtgc tgatangagg aaaggctgaa ttaccttgtt gctctctcct 360
 aatgattggc aggtcnggta aatnccaaaa catattccaa ctcaacactt cttttccncc 420
 tancttgant ctgtgtattc cagganccagg cggatggaat gggccagccc nccgatgttc 480
 cant 484

<210> 54
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 54
 actaaacctc gtgcttctga actccataca gaasaacggtg ccctccctga acacggctgg 60
 ccactgggta tactgctgac aaccgcaaca acaaaaacac aaatccttgg cactggctag 120
 tctatgtcct ctcaagtgc tttttgtttg t 151

<210> 55
 <211> 91
 <212> DNA
 <213> Homo sapien

<400> 55
 acctggettq totccgggtg qttccggggc ccccccacgg tcccagaaac ggacactttc 60
 gccctnagc ggataclga gccaaaglqg t 91

<210> 56
 <211> 133
 <212> DNA
 <213> Homo sapien

<400> 56
 ggccgatgtg cgttggttat atacaaatat gtcattttat gtaegggact tgagtatact 60
 tggatttttg gtatctgttg gttgggggga cggccagga accaatacc catggatacc 120
 aagggaacac tgt 133

<210> 57
 <211> 147
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(147)
 <223> n = A,T,C or G

<400> 57
 actctggaga acctgagccg ctgctccgcc tctgggatga ggtgatgcan gcngtggcgc 60
 gaotgggagc tgagcccttc cctttgcgcc tgcctcagag gattgttgcc gacntgcana 120
 tctcantggg ctggatnccat gcagggt 147

<210> 58

<211> 198
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)..(198)
 <223> n = A,T,C or G

<400> 58
 acagggatct aggtttnaag ttattgtatc tgtaaaatac attgaatttt ctgtatactc 60
 tgattacata caittatcct ttaaaaaaga tgtaaatctt aatttttatg ccattctatta 120
 atttaccast gaggtaacct gtatatgaga agtcatgata gcautgaatt ttaactagtt 180
 ttgacttcta agtttggg 198

<210> 59
 <211> 330
 <212> DNA
 <213> Homo sapien

<400> 59
 acaacaaatg ggttgtgagg aagtcttata agcaaaactg gtgatggcta ctgaaaagat 60
 ccattgaaaa ttatcattaa tgattttaaa tgacaagtta tcaaaaactc actcaatttt 120
 caactgtgct agcttgctaa aatgggagtt aactctagag caaatatagt atcttctgaa 180
 tacagtcaat aatgacaaa gccagggcct acaggtgggt tccagacttt ccagaccag 240
 cagaaggaat ctattttatc acatggatct ccgtctgtgc tcaaaatacc taatgatatt 300
 tttcgtcttt attggacttc ttgaaagat 330

<210> 60
 <211> 175
 <212> DNA
 <213> Homo sapien

<400> 60
 accgtgggtg ccttctacat tcttgacggc tcttccaca acatctgggt ctacttgggc 60
 gtctgtgggt ccttctctt catctctatc cagctgggtc tgcctcaga ctctgagcac 120
 tcttggaaac agcgggtggc gggcaaggcc gaggagtgc attcccgtgc ctggt 175

<210> 61
 <211> 154
 <212> DNA
 <213> Homo sapien

<400> 61
 accnacttt tctctctgt agcagtcgtg acttctcact gctacatgat gagggtgagt 60
 ggttggtgt cttccacagt atctctccct tctcggatct gctgagcagg acagcagtgc 120
 tggactgcac agccccgggg ctccacattg ctgt 154

<210> 62
 <211> 30
 <212> DNA
 <213> Homo sapien

<400> 62
 cgctcgagcc ctatagttag togtattaga 30

<210> 63
 <211> 89
 <212> DNA
 <213> Homo sapi n

<400> 63

acaaagtcatt tcagacacct ttgctcttca aaactgacca tcttttatat ttaatgcctc 60
ctgtatgaal aaaaatggtt atgtcaagt 89

<210> 64
<211> 97
<212> DNA
<213> Homo sapien

<400> 64
accggagtaa ctgagtcggg acgctgaatc lgaatccacc aataaataaa ggttctgcag 60
aatcagtga tccaggattg gtcccttgat ctgggt 97

<210> 65
<211> 377
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)..(377)
<223> n = A,T,C or G

<400> 65
acaacuaaaa ntcccttctt taggcoactg atggaaacct ggaacccctt tttgatggca 60
gcattggctc ctggccttg acacagcggc tgggggttgg gctntcccaa accgcacacc 120
ccaaacctgg tctaccaca nttctggcta tgggctgtct ctgccactga acatcagggt 180
tcggctcatc natgaatcc caanqgggac agaggtcagt agagggaagt caatgagaaa 240
ggtgctgttt gctcagcccg aaaaacgclg cctggcattc gccgctgaa tatgaacccg 300
tgggggtgaa ctaccccaan gaggaatcat gcttggguga tgcgaangtg ccacaggag 360
ggcggggagg agcatgt 377

<210> 66
<211> 305
<212> DNA
<213> Homo sapien

<400> 66
acgcctttcc ctcagaattc agggaaagaga ctgtgccttg ccttccctcg ttgttgctg 60
agaaacccgtg tgcaccttcc caccatatac accctugctc catctttgaa ctcaaacacg 120
aggaactaac tgcacccclg tctctctccc agtcccaagt tcacctcca tccctcacct 180
tctccctc tcaggcatat caacactgcu cagcacagg gccctgaatt tatgtggtt 240
ttatatatt lltaatcaga lgcactttat gtcattttt aataaagctt gaagattac 300
tggtt 305

<210> 67
<211> 385
<212> DNA
<213> Homo sapien

<400> 67
actacacaca ctccacttgc ccttgtgaga cactttgtcc cagcacttta ggaatgctga 60
ggtoggacca gccacatctc atgtgcaaga ttgcccagca gacatcagg ctgagagttc 120
cccttttaaa aaaggggact tgcctaaaaa agaagtctag ccacgattgt gttagcagc 180
tgtgctgtgc tggagattca cttttgagag agttctctc tgagacctga tctttagagg 240
ctgggcagtc ttgcacatga gatggggctg gtctgatctc agcactcctt agtctgcttg 300
cctctcccag ggcaccagcc tggccacacc tggttacagg gcactctcag atgccatac 360
catagtttct qtgtatgtg accgt 385

<210> 68
<211> 73
<212> DNA
<213> Homo sapien

<400> 68
acttaaccag atatattttt accccagatg gggglettct ttgtaaaaa tgaaaataaa 60
gttttttttaa lgg 73

<210> 69
<211> 536
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(536)
<223> n = A,T,C or G

<400> 69
actagtccag tgtggtggaa ttccattgtg ttgggggctc tcacctctct ctctgcagc 60
tccagctttg tgcctctgct ctgaggagac catggcccag catctgagta cctctgctgct 120
cctgctggcc accctagctg tggccctggc ctggagcccc aaggaggagg ataggataat 180
cccgggtggc atctataacg cagacctcaa tgatgagtgg gtacagcgtg ccttcaactt 240
cgccatcagc gagtataaca aggccacca agatgactac tacagacgtc cgtgcgggt 300
actaagagcc aggcacacaga ccgttggggg ggtgattac ttcttcagac tagaggtggg 360
ccgaaccata tgtaccaagt ccagcccaa cttggacacc tgtgccttuc atgaacagcc 420
agaactgcag aagaaccagt tgtgctcttt ctagctctac gaagttccct tggggagaca 480
gaangtccct gggtagaatc cagggtgtcaa gaaalocken ygatclgty ccaggc 536

<210> 70
<211> 477
<212> DNA
<213> Homo sapien

<400> 70
atgacccta acagggggcc tctcagccct cctaagtacc tcgggctag coattgtgatt 60
tcacttccac tccataacgc tctcataact aggcctaata accaacacac taaccatata 120
ccaatgatgg cgcgatgtaa cagagaaaag cactatccaa gccacacaca caccacctgt 180
ccaaaaaggg ctctgatacg ggataatcct atttattacc tcagaagttt tttctcttgc 240
agggattttt ctgagccttt taccactcca gcttagcccc taacccccaa ctaggaggggc 300
actggcccc aacaggeatc acccgcctaa atccctaga agtcuacac ctaaacacat 360
ccgtattact cgcatacaga gtatcaalca cctgagctca ccatagtcta atagaaaaca 420
nucgnaacca aattattcaa agcacctgctt attacaattt laclnggtct ctatttt 477

<210> 71
<211> 533
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(533)
<223> n = A,T,C or G

<400> 71
agagctatag gtacagtgtg atctcagctt tgcaaacaca tttctacat agatagtact 60
aggtattaat agatattgtaa agaaagaaat cacaccatta ataattggtaa gattggttta 120
tgtgatttta gtggtatttt tggcaccctt atatattgtt tccaaacttt cagcagtgal 180
attatttcca taacttaaaa agtgaggttg aaaaagaaaa tctccagcaa gcctctcatt 240
taaataaagg tttgtcatct llaaaaatac agcaatatgt gactttttta aaaaagctglc 300
aaatagggtgt gacctacta ataattlatta gaalacatt taauacatc yagtaacctca 360
agtacgtttg ccttgaaaaa talcaaatat aactctttaga gaactgtaca laaaagaatg 420
cttcgtaat ttggaqlang aggttccclc ctcaalttky latllttaa aagtacatgg 480
taaaaaaaa aalttcaaac agtatataag gctgtaaaaa qaagaattct gcc 533

<210> 72

<211> 511
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(511)
 <223> n = A,T,C or G

<400> 72
 tattacggaa aaacacacca cataattcaa ctancaaaaga anactgcttc agggcgtgta 60
 aatgaaggg ctccaggga gttatctgat taagaaacac taaggaggg ecaaggctaa 120
 aagccgcagg atgtctacac tatancaggc gctatttggg ttggctggg gagctgtgga 180
 aascctggan agattgggtg tgganacgc cgtgggtatt cctcattgtt attacanagt 240
 gaggttctct gtgtgccac tggtttgaaa accgttctnc aataatgata gaatagtaca 300
 cacatgagaa ctgaaatggc ccaaacccag aaagaaaggc caactagatc ctgagaanac 360
 gcttctaggg acaataaccg atgaagaaaa gatggcctcc ttgtgcccc gtctgttatg 420
 atttctctcc attgcagcna naaacccgtt ctcttaagca aacncagggtg atgatggcna 480
 aaatacacc cctcttgag nacnnggagg a 511

<210> 73
 <211> 499
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(499)
 <223> n = A,T,C or G

<400> 73
 cagtgcagc actggtgcca gtaccagtac caataacagt gccagtgccg gtgccagcac 60
 cagtgtggc ttccagtgtg gtgccagcct gaccgccact ctccacattg ggctcttcgc 120
 tggccttggg ggagctggg ccagcacccag tggcagctct ggtgcctgtg gtttctccta 180
 caagtgcag tttagatatt gttaatctct ccagtcttct tottcaagcc aggggtgcac 240
 ctcagaaacc tactcaaac agcaactctg gcagccaata tcaatcaatt gaagttgaca 300
 ctctgcatta aatctatttg ccatttctga aaaaaaaaaa aaaaaaaggg cggccgctcg 360
 antctagagg gcccgtttaa acccgctgat cagcctcgac tgtgcctctc anttgcagc 420
 catctgttgt ttgcccctcc cccgntgctt tcttgaccc tggaaagtgc cactccact 480
 gtcccttctt aantaatat 499

<210> 74
 <211> 537
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(537)
 <223> n = A,T,C or G

<400> 74
 tttcatagga gaacacactg aggagatact tgaagaattt ggattcagcc gcgaagagat 60
 ttatcagcct auctcagata aaatcattga aagtaataag gtaaaagcta gtctctaact 120
 tccaggccca cggctcaagt gaatttgaat actgcattta cagtgtagag taacacataa 180
 cattgtatgc atggavacat ggaggacacg tattacagtg tccatccact ctaatcaaga 240
 aaagaattac aqactctgat tclacagtga tgattgaatt ctaaaaatgg taatcattag 300
 ggcttttgat ttataaact lgggtactt atactaaatt atggtagtta tactgccttc 360
 cagtttgcct galataattg ttgacttaa gattcttgac ttatatattg aatgggttct 420
 actgaaaann gaatgatata ttcttgaaga catcgalata cattcattta cactcttgat 480
 tctacaatgt agaaaatgaa ggaaatgccc caaatgtat ggtgataaaa gtccct 537

<210> 75
 <211> 467
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{467}
 <223> n = A,T,C or G

<400> 75
 caaanacaat tgttcnaaag atgcaaatga tacactactg ctgcagctca caaacacctc 60
 tgcattattac agctacctcc tctgtctcct caagtagtgt ggtctatctt gccatcatca 120
 cctgtctgtct gcttagaaga acggctctct gctgcaangg agagaaatca taacagacgg 180
 tggcacaagg aggcacatctt ttctctatcg gttattgtcc ctagaagcgt cttctgagga 240
 tctagttaggg ctttctttct gggtttgggc catttcantt ctcatgtgtg tactattcta 300
 tcattattgt ataacggttt tcaaaccnct gggcaacnag agaacctcac tctgtaataa 360
 caatgaggaa tagccacggg gatctccagc accaaatctc tccatgtfnt tccagagctc 420
 ctccagccaa cccaaatagc cgctgctatn gtgtagaaca tccctgn 467

<210> 76
 <211> 400
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{400}
 <223> n = A,T,C or G

<400> 76
 aagctgacag catteggggc gagatgtctc gctccgtggc cttagctgtg ctgcgctac 60
 tctctcttct tggcctggag gctatccagc gtactccaaa gattcaggtt tactcacgct 120
 atccagcaga gaattggaaag tcaaatcttc tgaattgcta tgtgtctggg ttctcatcat 180
 ccgacattga agttgactta ctgaagaatg gagagagaat tgaaaaagtg gagcattcag 240
 acctgtcttt cagcaaggac tggctcttct atctcttgta ctacactgaa ttcaacccca 300
 ctgaaaaaga tgagtatgac tgcctgtgtg acctgtgtac ttgtgtacag cccaaagatg 360
 tttagtgagg taanacatg taagcagcan cctggaggt 400

<210> 77
 <211> 248
 <212> DNA
 <213> Homo sapien

<400> 77
 ctggagtgc ttggtgttct aagccccctg aggsagcaga atgcaccttc tgaggcacct 60
 ccagctgcc cggcggggga tgcgaggctc ggagcacctc tgccgggtg tgattgtgc 120
 caggcaactgt tcatctcagc tttctgtctc ctttgcctcc ggcaagcgtc tctgtgaaa 180
 gttcatatct ggagcctgat gtcttaacga ataaaggtcc catgctccac ccgaaaaaaa 240
 aaaaaaaa 248

<210> 78
 <211> 201
 <212> DNA
 <213> Homo sapien

<400> 78
 actagtccag tctggcggaa ttccattgtg ttgggcccac cacaatggct accttttaaa 60
 tcaccacgac ccgcgcctgc ccgtgccccn cgtctgtgct aacgacagta tgatgcttac 120
 tctgtacttc ggaacctatc ttatgtaat taatgtatgc ttctttgttt ataaatgcct 180
 gatttcaaaa aaaaaaaaaa a 201

<210> 79
 <211> 552
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(552)
 <223> n = A,T,C or G

<400> 79
 tccttttgtt aggtttttga gacaacccta gacctaaact gtgtcacaga cttctgaatg 60
 tttaggcagt gctagtaatt tccctgtaat gattctgta ttactttcct attctttalt 120
 cctctttctt ctgaagatta atgaagttga aaattgaggt ggataaatac aaaaaggtag 180
 tgtgatagta taagtatcta agtgcagatg aaagtgtgtt atatatatcc attcseaat, 240
 atgcaagtta gtaattactc agggtttaact aaattacttt aatatgctgt tgaacctact 300
 ctgttccttg gctagaaaaa attataaaca ggactttgtt agtttgggaa gccaaattga 360
 taatattcta tgtttctaaaa gttgggctat acataaanta tnaagazata tgggaatttta 420
 ttcccaggaa tatgggggtc atttatgaat antacccggg anagaagttt tgantnaaac 480
 cngttttggg taatacgtta atatgtcctn aatnaacaag gcntgactta tttccaaaaa 540
 aaaaaaa aa 552

<210> 80
 <211> 476
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

<400> 80
 acagggattt gagatgctaa ggccccagag atcgtttgat ccaaccctct tattttcaga 60
 ggggaaaatg gggcctagaa gttacagagc atctagctgg tgcgctggca cccctggcct 120
 cacacagact cccgagtagc tgggactaca ggcacacagt cactgaagca ggcctgtttt 180
 gcaattcaag ttgccacctc caacttaazc attcttcata tgtgatgtcc ttagtcaata 240
 aggttaaaact ttcccavcca gaaaaggcaa cttagatuaa atcttagagt actttcatat 300
 tcttctaaat cctcttcuag cctcactttg agtctcctt ggggggttgat aggaantntc 360
 tcttggttll ctcaataaaa tctctatcca tctcatgttt aatttggtac gcntauaat 420
 gctgaaaaaa ttaaatgtt ctgglttcnc tttaaaaaaa aaaaaa aaaaaa 476

<210> 81
 <211> 232
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(232)
 <223> n = A,T,C or G

<400> 81
 tttttttttg talgcctctn ctglcgngtt attgttgtct ccaaccttga ggagcccagt 60
 ttctttctga tctttcttll ctgggggato ttcttggtc tgcacctcca ttcccagcct 120
 ctcatccca tcttgcaatt ttgttagggt lggagggcgt ttcttggtag cccctcagag 180
 actcagtcag cgggaataag tcttaggggt gggggtgtgt gcaagccggt ct 232

<210> 82
 <211> 383
 <212> DNA
 <213> Homo sapien

28

<220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A, T, C or G

<400> 82
 aggcgggagc agaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc 60
 agtaccagta ccaataacat gccagtgcca gtgccagcac cagtgggtggc ttcaagtctg 120
 gtgccagcct gaccgccact ctccacatttg ggctcttcgc tggccttggg ggagctgggtg 180
 ccagcaccag tggcagctct ggtgcoctgtg gtttctccta caagtggatg tttagatatt 240
 gttaatcttg ccagtctttc tttcaagcc aggggtgcac ctcaaaaacc tactcaaac 300
 agcaactctng gcagccacta tcaatcaatt gaagttgaca ctctgcatta aatctatttg 360
 ccatttcasa aaaaaaaaaa aaz 383

<210> 83
 <211> 494
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(494)
 <223> n = A, T, C or G

<400> 83
 accgaattgg gaccgctggc ttataagoga tcatgtcctc cagtattacc tcaacgagca - 60
 gggagatcga gtctatacgc tgaagaaatt tgacccgatg ggacaacaga cctgctcagc 120
 ccacccctgct cggttctccc cagatgacaa atactctcga caccgaatca ccacaaagaa 180
 acgcttcaag gtgctcatga cccagcaacc ggcccctgtc ctctgagggt ccttaaaactg 240
 atgtcttttc tggccctgtg taccctctgg agactccgta accaaactct tcggactgtg 300
 agccctgatg ccttttttgc agccatactc lltggcctcc aglctctcgt ggcgatlgat 360
 tatgcttggtg tgaggcactc atggctggct caccatnaa ggggaacacat lltgctttt 420
 tttccatat tttcaattac naccagaata nltcaqaata aalgaattga aaaaclctta 480
 aaaaaaataaa aaaa 494

<210> 84
 <211> 380
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(380)
 <223> n = A, T, C or G

<400> 84
 gctggtagcc tatgqcgtag ccacgggagg qctcctgagg caccgggacag tgaacttccc 60
 agtatacctgc qccgcgtctt ctcccgltcc tacctgcaga tcttcgggca gattccccag 120
 gaggacatgg acgtggccct catggagcac agcaactgct cglcggagcc cggcttctgg 180
 gcaaaccttc clggggccca ggccggcacc tgcgtctcnc agtatgcnaa ctggclgggtg 240
 gtgctgclcc tgcctatctt cctgctcgtg gccaacatcc tgcctggcacc lltgctcattg 300
 ccattgttcag ttacacattc ggcaaaagtac agggcaacag cnatctctac tgggaaggcc 360
 agcqltnocg cctcatccgg 380

<210> 85
 <211> 481
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> {1}... (481)

<223> n = A, T, C or G

<400> 85

gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctcgc	ttcatacogc	60
tnccatcgtr	atactgtagg	tttgcacaca	cctcctgcac	cttggggcgg	ctaataacca	120
ggaaactctc	aatcaagtoa	cogtcatna	aaactgtggc	tggttctgtc	ttccgctogg	180
tgtgaagga	tctccagaag	gagtgcctga	tcttccccac	acttttgatg	actttattga	240
gtcgattctg	catgtccagc	aggaggttgt	accagctctc	tgacagttag	gtcaccagcc	300
ctatcatgcc	nttgaacgtg	ccgaagaaca	ccgagccttg	tgtggggggg	gnagtctcac	360
ccagattctg	cattaccaga	nagcogtggc	aaaaganatt	gacaactcgc	ccaggngaa	420
aaagaacacc	tcctggaagt	gctngccgct	cctcgtccnt	tggtggnnng	gcntnccctt	480
t						481

<210> 86

<211> 472

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (472)

<223> n = A, T, C or G

<400> 86

aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatin	ttgtctgctg	agaattcatt	60
acttggaaaa	gcaacttnaa	gcctggacac	tggtattaaa	attcacaata	tgcaacactt	120
taaacagtgt	gtcaatctgc	tcctttaact	tgtcatcacc	agtcctggaa	taagggtatg	180
ccctattcac	acctgttaaa	aggcgctaa	gcatttttga	ttcaacatct	ttttttttga	240
cacaagtcgg	aaaaangcaa	aagtaaacag	ttnttaactt	gttagccaat	tcactttctt	300
catgggacag	agccactttg	tttaaaaaag	aaattgcata	ataattgagct	ttgggagctg	360
atatnlgagc	ggaagantag	cctttctact	lcaccagaca	caactccttt	catattggga	420
tgttnacnaa	agltctgtct	cttaccagag	ggatgcttct	gtggcaattc	tg	472

<210> 87

<211> 413

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (413)

<223> n = A, T, C or G

<400> 87

agaaaccagt	atctctnaaa	acnacctctc	ataccttgag	gacchsaatt	tgtgtgcgtg	60
tgtgtgtgog	cgcataattat	atagacagge	acatcttttt	tacttttgta	aaagcttatg	120
ccctctttggt	atctatatct	gtgaaaqttt	taattgatctg	ccataatgtc	ttggggacct	180
ttgtcttctg	tgtaaatggg	actagagaaa	acacctatnt	tatgagtcac	tctagttngt	240
tttattogac	atgaagguae	tttccagatn	acacacttne	caaactctcc	cttgactagg	300
ggggacacaa	aaaaacanaa	ctgaacatne	gaacacaattn	cctgggtgaga	aattncataa	360
acagaaalct	ggctngtctat	tgaaanann	catcattnaa	acgttttttt	ttt	413

<210> 88

<211> 448

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (448)

<223> n = A, T, C or G

```

<400> 88
cgcagcgggt cctctctatc tagctccagc ctctcgcttg cccactccc cgcgtccgc 60
gtcctagccn accatggccg ggcacctgag cgcctcgctg ctctgctgg ccactcctgg 120
cgtggccctg gccgtgagcc cgcgggccgg ctccagtcgc ggcaagccgc cgcgcctggg 180
gggaggccca tggacccgcg gtggaagaag aaggtgtgcg gcgtgcactg gactttgcg 240
tcggcnanta caacaaaccc gcaacnactt ttaccnagcn cgcgtgcag gtgtgccc 300
cccaancaa ttgttactng gggtaantaa ttcttggaag ttgaacctgg gccaaacnng 360
tttacagaa ccnagccaat tngaaacatt nccctccat aacagccct tttaaaagg 420
gaancantcc tgncttttc caaatitt 448

```

```

<210> 89
<211> 463
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(463)
<223> n = A,T,C or G

```

```

<400> 89
gaattttgtg cactggccac tgtgatggaa ccattgggcc aggatgcttt gactttatca 60
gtagtgtatc tgccaaagtt ggtgttgtaa catgagtatg taaaatgtca aaaaatttagc 120
agaggcttag gtctgcatat cagcagacag ttgtccgtg tattttgtag ccttgaagtt 180
ctcagtgaac agttnattct gatgcgaagt cttnattcca gtgttttagt cctttgcac 240
tttnatgttn agacttgcc cttnaaatt gottttgnt totgcaggta ctatctgtg 300
tttaacaaa tagaannact tctctgcttn gaanatttga atatcttaca tctnaaaatn 360
aattctctcc ccataanna acccangccc ttggganaat ttgaaaaang gntccttann 420
aattcnnana anttcagntc tcatccaca naacngganc ccc 463

```

```

<210> 90
<211> 400
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(400)
<223> n = A,T,C or G

```

```

<400> 90
agggattgaa ggtctntnt actgtggac tgttcacca ccaactctac aagttgctgt 60
cttcactca ctgtctgtaa gcntnttaac ccagactgta tottcataaa tagaacaact 120
tcttcaccag tcacatcttc taggaccttt ttggattcag ttagtataag ctcttccact 180
tcctttgtla agacttcatc tggtaaagtc ttaagttttg tagaaaaggaa ttaattgct 240
cgttctctaa caatgctctc tcttggaagt atttggctga acaaccaccc tnaagtcct 300
ttgtgcaccc attttaata tacttaata ggcattggtn cactaaggtla aattctgca 360
gagtcactctg tctgcaaaag ttgcgttagt aatctgcca 400

```

```

<210> 91
<211> 480
<212> DNA
<213> Homo sapien

<220>
<221> misc_featur
<222> (1)...(480)
<223> n = A,T,C or G

```

```

<400> 91
gagctcggat ccactaatct ttgtctgagg gcagcacaca tatncagtgc catgnaact 60

```

```

ggtctacccc acatgggagc agcatgcgct agntatataa ggtoattccc tgagtuagac      120
atgcctcttt gactaccgtg tgccagtgcg ggtagattctc acacacctcc nncogctctt      180
tgtggaaaaa ctggcacttg nctggaaacta gcaagacatc acttacnaat tc cccacga      240
gacacttgaa aggtgtaaca aagcgactct tgcatfctt tttgtccctc cggcaccagt      300
tgtcaatact aaccogctgg tttgcctcca tcacatttgt gatctgtage telgqalaca      360
tctcctgaca gtaotgaaga acttctctct ttgtttcaaa agcaactctt ggtgcctgtt      420
ngatcaggtt cccatttccc agtcogaatg ttcacatggo atatnttact tccccaaaaa      480

```

```

<210> 92
<211> 477
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(477)
<223> n = A,T,C or G

```

```

<400> 92
atacagccca natccracca cgaagatgcg cttgttgact gagaacctga tgcgggtcact      60
ggteccgctg tagcccccagc gactctccac ctgctggaag cggttgatgc tgcactcctt      120
cccacgcagg cagcagcggg gcoggtcaat gaactccact cgtggcttgg ggttgacggg      180
taantgcagg aagaggctga ccacctcgcg gtccaccagg atgcccgaact gtgcgggacc      240
tgcagcgaaa ctccctcgatg gtcattgagcg ggaagcgaat gangcccagg gccttgccca      300
gaaccttccg cctgtttctct ggcttcacct gcagctgctg ccgctnacac tcggcctcgg      360
accagcggac aaacggcggt gaacagccgc acctcacgga tgcccantgt gtcgcgctcc      420
aggaacggcn ccagcgtgtc caggtcactg tcggtgaanc ctccgcgggt aatggcg      477

```

```

<210> 93
<211> 377
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(377)
<223> n = A,T,C or G

```

```

<400> 93
gancggctgg accttgccctc gcattgtgct gctggcagga ataccttggc aagugactcc      60
agtucgagca gccccagacc gctgcgcgcc gaagctaagc ctgcctcttg ccttccctc      120
cgctctaatg caqaaccant agtgggagca ctgtgtttag agliaaqat gaaactgtt      180
tgatttctact tgggaatttc ctctgttata tagcttttcc caatgctaat ttccaaacaa      240
caacaaacaa alancatgtt tgctgtttna gltglalaaa aglenglga telqlatnta      300
aagaaalal tactgttaca tatctcgtt gcaanttrlg tatctatagg tncctctgga      360
atcaatatat tattaaa

```

```

<210> 94
<211> 495
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(495)
<223> n = A,T,C or G

```

```

<400> 94
ccctttgagg ggttagggtc cagttccacg tggagaaac aggcacagg aantgcgtgc      60
cgagctgang cagatttccc acagtgaacc cagagccctg ggcctatagc tctgacucc      120
ccauggaung accaccttct gggggcatgg gctggagggc aggcacctaga ggcacccagg      180
gaaggcccca ttccqagct gtcccccag gaggaagggg aggggctctg tctgaccccc      240

```

acgaggaana	ggccctgant	cctgggatca	nacacccctt	cacgtgtctc	cccacacaaa	300
tgcaggtcna	ccaagggtccc	ctctcagter	cttccctaca	ccctgacgg	ncactggccc	360
acacccaccc	agencancca	cccgccatgg	ggaatgtnet	caaggaaatcg	cnnggcaacg	420
tggactctng	lcccnnaagg	gggcagaatc	tccaatagan	gganngascc	cttgcctnana	480
aaaaaaaaaa	aaaaa					495

<210> 95
 <211> 472
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(472)
 <223> n = A,T,C or G

ggttacttgg	tttcattgcc	accacttagt	ggatgtcatt	tagaaccatt	ttgtctgctc	60
cctctggaag	ccttgcgcag	agcggacttt	gtaattgttg	gagaataaact	gctgaatttt	120
tagctgtttt	gagttgatto	gcaccuactgc	accaacaactc	aatatgaaa	ctatttnact	180
tatttattat	cttgctgaaa	gtatacaatg	aaaattttgt	tcatactgta	tttatcaagt	240
atgatgaaaa	gcaatagata	tatattcttt	tattatgctt	aatatgatt	gccattatta	300
atcgccaaaa	tgtggagtgt	atgttctttt	cacagtaata	tatgcccttt	gtaccltca	360
tkqgttattt	tatltgtaaa	gaattacaaa	attcttaatt	taagaaatg	glangttata	420
tttatttcan	taatttcttt	ccttgtttac	gttaattttg	aaaagaatgc	at	472

<210> 96
 <211> 476
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(476)
 <223> n = A,T,C or G

ctgaagcatt	tcttcaaat	tnictacttt	tgtcattgal	acclgtagta	agttqacaat	60
gtggtgaatt	ttcaaaatla	tatgttaact	ctacclagltt	tactttctcc	cccaagtcct	120
tttttaactcc	tgatltttac	acacacaaatc	cagaacttat	tatatagcct	ctaagtcclt	180
alicttcaca	gtagatgatg	aaagagtcct	ccagtgtctt	gngcanaatg	ttctagntat	240
agctggetac	atacngtggg	agttctataa	actcatacct	cagtgggact	naaccaaaat	300
tgtgttagtc	tcaattccta	ccacactgag	ggagcctccc	aaatcactat	attcttatct	360
gcaggtaact	ctccagaaaa	acngacaggg	caggcttgca	tgaaaaagtn	acatctgcgt	420
tacaaagtct	atcttctca	nangtctgtn	aaggaacaat	ttaatcttct	agcttc	476

<210> 97
 <211> 479
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> (1)...(479)
 <223> n = A,T,C or G

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aaalaatgcl	gcaaaactta	tgttcttatg	caaatggaa	cgctaatgaa	acacagctta	120
caatcgcc	aa	tcaaaactca	caagtgtctc	tctgtttag	atttagtcta	180
galltgctc	cttcggatat	gattgtttct	canatcttgg	gcaatnttcc	ttagtcaaat	240
caggctacta	gaattctggt	attggatatn	tgagagcatg	aaatttttaa	naatacactt	300

gtgattctna	aatttctcac	saatttccact	tatacctgct	atcagcagct	agaaaaacat	360
ntnnttttta	natcaaagta	ttttgtgttt	ggaantgttn	aatgaaate	tgaatgtggg	420
ttenatctta	ttttttcccn	gacnactant	tnctttttta	gggnetcttc	tganccatc	479

<210> 98
 <211> 461
 <212> DNA
 <213> Homo sapien

<400> 98						
agtgacttgt	cctccaacaa	aaccccttga	tcaagtttgt	ggcactgaca	atcagacctc	60
tgttagttcc	tgtcatctat	togctactaa	atgcagactg	gaggggacca	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cctacttgta	cggactttga	180
agtgattcag	tttctcttac	ggatgagaga	ctggctcaag	aatatcctca	tgcagcttta	240
tgaagccact	ctgaacacgc	tggttatcta	gatgagaaca	gagaaataaa	gtcagaaaat	300
ttacctggag	aaaagaggct	ttggctgggg	acctatcccat	tgaaccttct	cttaaggact	360
ttaagaaaaa	ctaccacatg	ttgtgtatcc	tgggtgccggc	cgtttatgaa	ctgaccaccc	420
tttggataaa	tcttgacgct	cctgaacttg	ctcctctgog	a		461

<210> 99
 <211> 171
 <212> DNA
 <213> Homo sapien

<400> 99						
gtggcngggc	gcaggtgttt	cctcgtaacg	cagggccccc	tcccttcccc	aggcgtccct	60
cggcgctctc	gcggggccga	ggaggagcgg	ctggcgggtg	gggggagtgt	gaccacacct	120
cgggtgagaa	agccttctct	agcgatctga	gaggcgtgcc	ttgggggtac	c	171

<210> 100
 <211> 269
 <212> DNA
 <213> Homo sapien

<400> 100						
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cgactgcayc	gacggcggcg	gcgacagtcg	cagggtgcagc	gcggggcgct	gggggtcttg	120
aaggctgagc	tgaacnngca	gaggctcgtgt	cangtccccc	gaccttgacg	ccgtcgggga	180
cagccggaa	agagcccggt	gaagcgggag	gcctcgggga	gccccctcgg	aaggggcgcc	240
cgagagatcc	gcaggtgcag	gtggccgcgc				269

<210> 101
 <211> 405
 <212> DNA
 <213> Homo sapien

<400> 101						
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gctagcaagg	taacagggtta	gggcatgggt	acatgttccag	gtcaacttcc	tttctcgtgg	120
ttgattgggt	tgtcttttatg	ggggcggggg	ggggcagggg	aaacgaagca	aataaacclgg	180
agtgggtgca	ccclccctgt	agaaacclgg	tacaagcctc	ggagcagttc	acclggctctg	240
tgaacglocat	tttcttgaca	lcaalqlltat	tagaagtcag	gatctctltt	agagagtcga	300
ctgttcttgg	gggagattag	gggttctclgc	caaactccac	aaaatccact	gaaaaagttg	360
galqatcagc	acgaatcccg	aggcatattc	tcctatcggg	ggcca		405

<210> 102
 <211> 470
 <212> DNA
 <213> Homo sapien

<400> 102						
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ggcacttaat	ccatttttat	ttcaaaatgt	ctacaaattt	aatccatta	tacgggtattt	120
tcaaaatcta	aatttatcaa	attagccaaa	tccttaccas	ataatacccc	aaaatcaaaa	180
atatacttct	ttcagcaaac	ttgttacata	acttcaaaaa	atatatacgg	ctgggtgtttt	240
caaagtacaa	ttatcttaac	actgcaaaon	tttcaaggaa	ctaaaataaa	aaaaaacact	300
cgcgaagggt	taaagggaac	aacaaattct	tttacaacac	cattataaaa	atcatatctc	360
aatctttagg	ggaaatatata	cttcaacacg	gctcttcaact	tttactcaact	ttgtttattt	420
ttttaaacca	ttgttttggc	ccaaacacac	ggaaaccccc	ctggactagt		470

<210> 103
 <211> 581
 <212> DNA
 <213> Homo sapien

<400> 103						
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tacacatatt	tatttttata	ttgggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taagtggaaa	ctgccttaga	tacataattc	ttaggaatta	gcttaaaatc	tgccataagt	180
gaaaatcttc	tctagctott	ttgactgtaa	atttttgact	cttgtaaaac	atccaaatto	240
attctttcttg	tctttaaaaa	tatctaattc	ttccattttt	tccttattcc	aagtcacttt	300
gcttctctag	cctcatcttc	tagctcttat	ctactattag	taagtggctt	tttloctaaa	360
agggaataca	ggaagagaaa	tggaacacaa	aacnaacatt	ttatattcat	atttctacct	420
acgttaataa	aatagcattt	tgtgaagcca	gctcaaaaga	aggetttagt	ccttllalat	480
ccatttttagt	cactaaacga	tatcaaatgt	ccagaaatgca	aaagglllgt	gaacatttat	540
tcaaaagcta	atataagata	tttccacatac	tcacttllct	q		581

<210> 104
 <211> 578
 <212> DNA
 <213> Homo sapien

<400> 104						
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cactctctag	atagggcatg	aagaaaactc	atctttccag	ctttaaaata	acaatcaaat	120
ctcttatgct	atatcatatt	ttaagtttaa	ctaattgagtc	actggcttat	cttclcllga	180
aggaaatctg	ttcattcttc	tcattcatat	agttatatca	agtactccct	tcgataattga	240
gaggtttttc	ttctctatit	acacatatat	ttccatglga	attlqlatca	aacctttcatt	300
ttcatgcaaa	ctagaaaata	atgtttcttt	tgcataaagc	aagagaacaa	tatagcatta	360
caaaactgct	caaattgttt	gttaagttat	ccat,tatcat	tggttggcag	gagctaatac	420
aaatcacatt	tccgacagca	ataataaaac	lgaagtacca	gttaaatatc	caaaataatt	480
aaaggaaacat	ttttagcctg	qqlataakta	gctaattcac	tttacaagra	tttattagaa	540
tgaattcaaa	tgttattatt	cctagcccaa	cacaatgg			578

<210> 105
 <211> 538
 <212> DNA
 <213> Homo sapien

<400> 105						
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gtcttgaaac	ccaatattaa	tttgaggaaa	atcacaccaa	alacalttaq	taattatttt	180
aagatcatag	agcttgtaag	tgaaaagata	aaalltgaac	tcagaaactc	tgagcattaa	240
aaatccacta	ttagcaaaata	aattactatg	gaattcttgc	tttaattttg	tgatgaatat	300
gggggtgtcac	tggtaaacca	acacattctg	aaggatatac	tacttagtga	tagattctta	360
tgtacttttg	taatacgtgg	atatgagttg	acaagtttct	ctttcttcaa	tcttttaagg	420
ggcgagaaat	agggaagaaa	agaaaaggat	lacgcatact	gttctttcta	tggaaggatt	480
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<210> 106
 <211> 473
 <212> DNA
 <213> Homo sapien

<400> 106
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 tttataaatg taagggtgca ttattgagta atatatccct ccaagagtgg atgtgtccct 180
 tctccaccca actaatgaac agcaacatta gtttaatttt attagtagat ataccctgct 240
 gcaaacgcta attctcttct ccatcccat gtgatattgt gtatatgtgt gaggtagtag 300
 aatgcataca aatctacat caacagcaag atgaagctag gctgggcttt cggtagaat 360
 agactgtgtc tglctgaac aatgatctg acctatcttc ggtggcaag actcttcgaa 420
 ccgcttcttc aaggcgctg caacahLigt ggccttttgc acttgcttca aaa 473

<210> 107
 <211> 1621
 <212> DNA
 <213> Homo sapien

<400> 107
 cgccatggca ctgcagggca tctcggtcat ggagctgtcc ggccctggccc cggggccggtt 60
 ctgtgctatg gtccctggctg acttcggggc gcgtgtggtt cgcgtggacc ggcccggtc 120
 ccgctacgac gtgacccgt tgggcccggg caagcgctcg ctagtgtgtg acctgaagca 180
 gccgggggga gccgcggtgc tgggctgtct gtgcaagcgg tcggatgtgc tgcgtggacc 240
 ctccggccgc ggtgtcatgg agaaactcca gctgggcccc gagattctgc agcgggaaaa 300
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 tggtagaagt ccgtatgcc cgtgaatct cctggctgac ttgctggtg gtggccttat 480
 gtgtgcactg gccattataa tggctctttt tgaccgcaca cgcactgaca agggtcaggt 540
 cattgatgca aatatggtgg aaggaaacagc afatttaagt tcttttctgt ggaaactca 600
 gaaatcgagt ctgtgggaag caccctggag acagaacatg ttggttggc ggcaccttt 660
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 a 1621

<210> 108
 <211> 382
 <212> PRT
 <213> Homo sapien

<400> 108
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 Gly Pro Phe Cys Ala Met Val Leu Ala Asp Phe Gly Ala Arg Val Val
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 Arg Val Asp Arg Pro Gly Ser Arg Tyr Asp Val Ser Arg Leu Gly Arg
 35 40 45
 Gly Lys Arg S r Leu Val Leu Asp Leu Lys Gln Pro Arg Gly Ala Ala
 50 55 60
 Val Leu Arg Arg Leu Cys Lys Arg Ser Asp Val Leu Leu Glu Pro Phe
 65 70 75 80

Arg Arg Gly Val Met Glu Lys Leu Gln Leu Gly Pro Glu Ile Leu Gln
 85 90 95
 Arg Glu Asn Pro Arg Leu Ile Tyr Ala Arg Leu Ser Gly Phe Gly Gln
 100 105 110
 Ser Gly Ser Phe Cys Arg Leu Ala Gly His Asp Ile Asn Tyr Leu Ala
 115 120 125
 Leu Ser Gly Val Leu Ser Lys Ile Gly Arg Ser Gly Glu Asn Pro Tyr
 130 135 140
 Ala Pro Leu Asn Leu Leu Ala Asp Phe Ala Gly Gly Gly Leu Met Cys
 145 150 155 160
 Ala Leu Gly Ile Ile Met Ala Leu Phe Asp Arg Thr Arg Thr Asp Lys
 165 170 175
 Gly Gln Val Ile Asp Ala Asn Met Val Glu Gly Thr Ala Tyr Leu Ser
 180 185 190
 Ser Phe Leu Trp Lys Thr Gln Lys Ser Ser Leu Trp Gly Ala Pro Arg
 195 200 205
 Gly Gln Asn Met Leu Asp Gly Gly Ala Pro Phe Tyr Thr Thr Tyr Arg
 210 215 220
 Thr Ala Asp Gly Glu Phe Met Ala Val Gly Ala Ile Glu Pro Gln Phe
 225 230 235 240
 Tyr Glu Leu Leu Ile Lys Gly Leu Gly Leu Lys Ser Asp Glu Leu Pro
 245 250 255
 Asn Gln Met Ser Met Asp Asp Trp Pro Glu Met Lys Lys Lys Phe Ala
 260 265 270
 Asp Val Phe Ala Lys Lys Thr Lys Ala Glu Trp Cys Gln Ile Phe Asp
 275 280 285
 Gly Thr Asp Ala Cys Val Thr Pro Val Leu Thr Phe Glu Glu Val Val
 290 295 300
 His His Asp His Asn Lys Glu Arg Gly Ser Phe Ile Thr Ser Glu Glu
 305 310 315 320
 Gln Asp Val Ser Pro Arg Pro Ala Pro Leu Leu Leu Asn Thr Pro Ala
 325 330 335
 Ile Pro Ser Phe Lys Arg Asp Pro Phe Ile Gly Glu His Thr Glu Glu
 340 345 350
 Ile Leu Glu Glu Phe Gly Phe Ser Arg Glu Glu Ile Tyr Gln Leu Asn
 355 360 365
 Ser Asp Lys Ile Ile Glu Ser Asn Lys Val Lys Ala Ser Leu
 370 375 380

<210> 109
 <211> 1524
 <212> DNA
 <213> Homo sapien

<400> 109
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 cagtgcganc tagtggtctt cactgcttc ctctcgggcg tgggctggcg gctgaccccg 180
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cagggggaaa	caaaaaaa	aaaa				1524

<210> 110
 <211> 3410
 <212> DNA
 <213> Homo sapien

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<210> 111
 <211> 1289
 <212> DNA
 <213> Homo sapien

<400> 111						
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ccatgcagtg	cttcagcttc	attaagacca	tgatgatcct	cttcaatttg	ctcatcttct	180
tgtgtgggtg	agccctgttg	gcagtgggca	tctgggtgtc	aatcgatggg	gcctcctttc	240
tgaagatctt	ggggccactg	tgcctcagtg	ccatgcagtt	tgtcaagctg	ggclaccllc	300
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tgtctgtagt	gcctgccttc	aagaaagatt	atggttccc	ggaagacttc	actcaagtgt	540
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gcttcaatca	gcttttgtat	gacatccgaa	ctaattgcagt	caccgtgggt	ggtgtggcag	780
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accctggcaa	gcagcagtg	ttgggggagg	ggacaggatc	taacaaatgc	acttgggcca	960
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aagtgaatc	agcagagcct	ctgggtggat	gtgtgagagg	caattcaaaa	tgcataaac	1260
tgttacaatg	ttaaaaaaa	aaaaaaa				1289

<210> 112
 <211> 315
 <212> PRT
 <213> Homo sapien

<400> 112															
Met	Val	Phe	Thr	Val	Arg	Leu	Leu	His	Ile	Phe	Thr	Val	Asn	Lys	Gln
1				5					10					15	
Leu	Gly	Pro	Lys	Ile	Val	Ile	Val	Ser	Lys	Met	Met	Lys	Asp	Val	Phe
			20					25					30		
Phe	Phe	Leu	Phe	Phe	Leu	Gly	Val	Trp	Leu	Val	Ala	Tyr	Gly	Val	Ala
			35				40					45			
Thr	Glu	Gly	Leu	Leu	Arg	Pro	Arg	Asp	Ser	Asp	Phe	Pro	Ser	Ile	Leu
			50			55					60				
Arg	Arg	Val	Phe	Tyr	Arg	Pro	Tyr	Leu	Gln	Ile	Phe	Gly	Gln	Ile	Pro
65				70				75						80	
Gln	Glu	Asp	Met	Asp	Val	Ala	Leu	Met	Glu	His	Ser	Asn	Cys	Ser	Ser
			85					90					95		
Glu	Pro	Gly	Phe	Trp	Ala	His	Pro	Pro	Gly	Ala	Gln	Ala	Gly	Thr	Cys
			100				105					110			
Val	S	r	Gln	Tyr	Ala	Asn	Trp	Leu	Val	Val	Leu	Leu	Leu	Val	Ile

Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala L u
 245 250 255
 Leu Pro Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg
 260 265 270
 Arg Leu Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe
 275 280 285
 Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val
 290 295 300
 Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly
 305 310 315 320
 Val Arg Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu
 325 330 335
 Val Phe Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg
 340 345 350
 Ala Val Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala
 355 360 365
 Thr Cys Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu
 370 375 380
 Thr Gly Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala
 385 390 395 400
 Ser Leu Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly
 405 410 415
 Asp Thr Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu
 420 425 430
 Pro Gly Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala
 435 440 445
 Gly Gly Ser Gly Leu Leu Pro Pro Pro Ala Leu Cys Gly Ala Ser
 450 455 460
 Ala Cys Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala
 465 470 475 480
 Arg Val Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp
 485 490 495
 Ser Ala Phe Leu Leu Ser Gln Val Ala Pro Ser Leu Phe Met Gly Ser
 500 505 510
 Ile Val Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala
 515 520 525
 Gly Leu Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp
 530 535 540
 Lys Ser Asp Leu Ala Lys Tyr Ser Ala
 545 550

<210> 114
 <211> 241
 <212> PRT
 <213> Homo sapien

<400> 114
 Met Gln Cys Phe Ser Phe Ile Lys Thr Met Met Ile Leu Phe Asn Leu
 1 5 10 15
 Leu Ile Phe Leu Cys Gly Ala Ala Leu Ala Val Gly Ile Trp Val
 20 25 30
 Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser
 35 40 45
 Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly
 50 55 60
 Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr
 65 70 75 80
 Glu Ser Lys Cys Ala Leu Val Thr Ph Ph Phe Ile Leu Leu Leu Ile
 85 90 95
 Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr
 100 105 110
 Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys

	115		120		125										
Asp	Tyr	Gly	Ser	Gln	Glu	Asp	Phe	Thr	Gln	Val	Trp	Asn	Thr	Thr	Met
	130					135					140				
Lys	Gly	Leu	Lys	Cys	Cys	Gly	Phe	Thr	Asn	Tyr	Thr	Asp	Phe	Glu	Asp
145				150						155					160
Ser	Pro	Tyr	Phe	Lys	Glu	Asn	Ser	Ala	Phe	Pro	Pro	Phe	Cys	Cys	Asn
			165						170					175	
Asp	Asn	Val	Thr	Asn	Thr	Ala	Asn	Glu	Thr	Cys	Thr	Lys	Gln	Lys	Ala
		180						185					190		
His	Asp	Gln	Lys	Val	Glu	Gly	Cys	Phe	Asn	Gln	Leu	Leu	Tyr	Asp	Ile
	195						200					205			
Arg	Thr	Asn	Ala	Val	Thr	Val	Gly	Gly	Val	Ala	Ala	Gly	Ile	Gly	Gly
	210					215					220				
Leu	Glu	Leu	Ala	Ala	Met	Ile	Val	Ser	Met	Tyr	Leu	Tyr	Cys	Asn	Leu
225				230						235					240
Gln															

<210> 115
 <211> 366
 <212> DNA
 <213> Homo sapien

<400> 115
 gctcttctc tccctcctc tgaatttaac tctttcaact tgcatttgc aaggattaca 60
 catttcaactg tgatgtatat tgtgttgcaa aaaaaaaas gtgtctttgt ttaaaattac 120
 ttggtttgtg aatccatctt gctttttccc cattgggaact agtcattac ccctctctga 180
 actggtagaa aaacatctga agagctagtc tatcagcacc tgacagggtg attggatggt 240
 tctcagacc atttcacca gacagcctgt ttctatcctg ttttaataat tagtttgggt 300
 tctctacatg cattaacaaac cctgtctcaa tctgtcauat aaaaqtctgt gacllgaaat 360
 ttagtc 366

<210> 116
 <211> 282
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(282)
 <223> n = A,T,C or G

<400> 116
 acaagatga accatttctt atattatagc aaaattaaaa tctaccgta ttctaatttt 60
 gagaatgag atnaaacaca atnttataaa gtctacttag agaagatcaa gtgacctcaa 120
 agactttact attttcatat ttttaagacac atgatttatc ctatttttagt aacctggttc 180
 atacgtttaa caaaggataa tctgaacagc agagaaggatt tgttagcaga aatctctgt 240
 tcaatctngs acletctana tcacagaunt ttctattcct ct 282

<210> 117
 <211> 305
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(305)
 <223> n = A,T,C or G

<400> 117
 acacatgtcg cttaactgoc ttcttagatg cttctgggtca acatanagga acagygacca 60
 tatttatcct cctctctgaa acaattgcaa aataanacaa aatatatgaa acaattgcaa 120

42

```

aataaggcaa aatatatgaa acaacagggtc tcgagatatt ggaaatcagt cactgaaggga      180
tactgatccc tgatcaactgt cctaattgcag gatgtgggaa acagatgagg tcacctctgt      240
gactgcccca gcttactgcc tgtagagagt ttctangctg cagttcagac agggagaaat      300
tgggt                                           305

```

```

<210> 118
<211> 71
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(71)
<223> n = A,T,C or G

```

```

<400> 118
accaggtgt ntgaatctct gacgtgggga tctctgattc cgcacaatc tgagtggaaa      60
aantctggg t.                                           71

```

```

<210> 119
<211> 212
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(212)
<223> n = A,T,C or G

```

```

<400> 119
ectcggllg gtgtcagcag caggtggcat tgaacatngc aatgtggagc ccaaaccaca      60
gaaaatgggg tgaattggc caactttcta tnaacttatg ttggcaantt tgccaccaac      120
agtaagctgg cctttcta ataaagaaaat tgaaggttt ctcactaanc ggaattaant      180
aatggantca aganactccc aggcctcagc gt                                           212

```

```

<210> 120
<211> 90
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(90)
<223> n = A,T,C or G

```

```

<400> 120
actngttgca natcaggggc cccccagagt caccgttgca ggagtccttc tggctttgcc      60
ctccgcgggc gcagaacatg ctggggtggt                                           90

```

```

<210> 121
<211> 218
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(218)
<223> n = A,T,C or G

```

```

<400> 121
tgtangctga anaagacaga naggggtgtc aaaaatggag aanccttqua gtcatttlga      60
gaataagatt tgctaagaga ttgggygcta aaacatgggt attggagagac attcttgaaq      120

```

atatncangt aaattangga atgaattcat ggttcttttg ggaattcctt tccgatngcc 160
agcatanaet fcattgtggg atancagctc cccttgta 218

<210> 122
<211> 171
<212> DNA
<213> Homo sapien

<400> 122
tagggglqta tgcacactga aggcacaaaa ttgagactca actggcttaa ccaataaagg 60
catttcttgg ctcatggaac aggaagtcgg atgggtgggg atcttcagtg ctgcatgagt 120
caccaccccg qcggtgtcat ctgtgccaca ggtccctgtt gacagtcgg t 171

<210> 123
<211> 76
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)..(76)
<223> n = A,T,C or G

<400> 123
tgtagcgtga agacnacaga atgggtgtgtg ctglqctato caggaaacaca tttatlatra 60
ttatcaanta ttgtgt 76

<210> 124
<211> 131
<212> DNA
<213> Homo sapien

<400> 124
acctttcccc aaggccaatg tccctgtgtg taactggccg gctgcaggac agctgcaatt 60
caatgtgctg ggtcatatgg aggggaggag actctaaaaa agccaatttt attctcttgg 120
ttaagatttg t 131

<210> 125
<211> 432
<212> DNA
<213> Homo sapien

<400> 125
acttctctta ctggctatga aatagatggg ggaaaattgc gttaccaact ataccactgg 60
cttgaacaaag aggtgatagc tcttcagagg acttctgact tttgtcaga tgcagaagaa 120
ctacagctctg catttggcag aaatgaagat gaatttggat taaatgagga tgcagaagat 180
ttgcctcanc aaacaaaagt gaaacaaact agagaaaatt ttcaggaaaa aagacagtgg 240
ctcttgaagt atcagtcact tttgagaatg tttcttagtt actgcatact tcatggatoc 300
catgggtggg gtcttgcato tgaagaatg gaattgattt tgccttttga agaattctcag 360
caggaaacat cagaaccact atttcttagc cctctgtcag agcaaacctc agtgcctctc 420
ctctttgctt gt 432

<210> 126
<211> 112
<212> DNA
<213> Homo sapien

<400> 126
acacaaactg atagtaaaa tagaaacLga gctgaaaLlt claatccact LLctaaccct 60
agtaagaatg atatttcccc ccagggtcca ccaaatattt aLaaaaattt gt 112

<210> 127

<211> 54
 <212> DNA
 <213> Homo sapien

<400> 127
 accacgaaac cacaaacaaag atggaagcat caatccactt gccaaagcaca gcag 54

<210> 128
 <211> 323
 <212> DNA
 <213> Homo sapien

<400> 128
 acctcattag taattgtttt gttgtttcat ttttttctaa tgtctccct ctaccagctc 60
 acctgagata acagaatgaa aatggaagga cagccagatt tctcctttgc tctctgtca 120
 ttctctctga agtctagggt acccattttg gggacccatt ataggcaata aacacagttc 180
 ccaaagcatt tggacagttt cttgtttgtt tttagaatgg ttttcccttt tcttagcctt 240
 ttctgtcaaa aggcctactc agtcccttgc ttgtctcagt gactgggctc cccagggcct 300
 aggtgtcctt cttttccatg tcc 323

<210> 129
 <211> 192
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(192)
 <223> n = A,T,C or G

<400> 129
 acatacatgt gtgtatatatt ttaaatatca cttttgtatc actctgactt tttagcatac 60
 tgaaaacaca ctaacataat ttntgtgaa cagtatcaga tacaacccaa atcattcaco 120
 tagcacatc atctgtgata naaagatagg tgagtttcat ttcccttcag ttggccaatg 180
 gataaacaaa gt 192

<210> 130
 <211> 362
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(362)
 <223> n = A,T,C or G

<400> 130
 ccccttttcta tggaaatgagt agactgtatg tttgaanatt tanccacaac ctctttgaca 60
 tataatgacg caacaaaaag gtgtgtttta gtccctatgg tcagtttatg cccctgacaa 120
 gtttccattg tgtttttgacg atttctctgc taatcgtgg atccctccatg ttattagtaa 180
 ttctgtatcc cattttgtta acgcctggta gatctaacct gctanguggc taactttata 240
 cttattttaa agctcttatt ttgtggctcat taaaatggca atttatgtgc agcactttat 300
 tguagcagga agcctgtgtg agtttggctgt aagctctctt gclaatctta aagagtaatg 360
 gg 362

<210> 131
 <211> 332
 <212> DNA
 <213> Homo sapi n

<220>
 <221> misc_f ature

<222> {1}...{332}

<223> n = A, T, C or G

<400> 131

ctttttgaaa	gategtgccc	actcctgtgg	acatccttgtt	ttaatggagt	ttcccatgca	60
gtangactgg	tatggttgca	gctgtccaga	taaaaacatt	tgaagagctc	caaaatgaga	120
gttcteccag	gttcgccctg	ctgctccaag	tctcagcage	agcctctttt	aggaggcatc	180
ttctgaacta	gattaaggca	gcttgtaaat	ctgatgtgat	ttggtttatt	atccaaactaa	240
cttccatctg	ttatcactgg	agaaagccca	gactccccan	gaonggtacg	gatttgtggc	300
atanaaggat	tgggtgaagc	tggcgttgtg	gt			332

<210> 132

<211> 322

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{322}

<223> n = A, T, C or G

<400> 132

auttttgcca	ttttgtalat	ataaaccatc	ttgggacatt	ctcctgaaaa	ctaggtgtcc	60
agtggctaa	agaaetccat	ttcaagccat	tctgaaggga	aaaccagcat	gacacagaat	120
ctcaaatcc	caaacagggg	ctctgtggga	aaatgaagg	aggacctttg	tatctcgggt	180
ttlagcaagt	taaatgaan	atgacaggga	aggcttattt	atcaacaaag	agaagagttg	240
ggatgcttct	aaaaaaact	ttggtagaga	aaatagggaat	gctnaatcct	aggggaagcct	300
gtaacaatct	acaattggtc	ca				322

<210> 133

<211> 278

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{278}

<223> n = A, T, C or G

<400> 133

acaagccttc	acaagtttaa	ctaaattggg	attaatcttt	ctgtanttat	ctgcataatt	60
cttgtttttc	tttccatctg	gctcctgggt	tgacaatttg	tggaaacaac	tctattgcta	120
ctatttaaaa	aaaatcaca	atctttccct	ttaagctatg	ttnaattcaa	actattcctg	180
ctattcctgt	tttgtcaaa	aaatttatatt	tttcaaaaata	tgtnatattg	tttgatgggt	240
cccacgaazc	actaataaaa	accacagaga	ccagcctg			278

<210> 134

<211> 121

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{121}

<223> n = A, T, C or G

<400> 134

gtttananaa	cttgttttagc	tccatagagg	aaagaatgtt	aaactttgta	ttttaaaaca	60
tgattctctg	aggttaaact	tggttttcaa	atgttatatt	tacttgtatt	ttgcttttgg	120
c						121

<210> 135

46

<211> 350
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(350)
 <223> n = A,T,C or G

<400> 135
 acttanaacc atgcctagca catcagaatc cctcaagaa catcagtata atcctatacc 60
 atancaagtg gtgactggtt aagcgtgcga caaaggtcag ctggcacatt acttgtgtgc 120
 aactttgata cttttgttct aagtaggaac tagtatacag tncctaggan tggtaactcca 180
 ggggtgcccc caactcctgc agccgctcct ctgtgccagn cctgnaagg aactttcgtc 240
 ccacctcaat caagccctgg gccatgctac ctgcaattgg ctgaacaaac gtttgetgag 300
 ttccccagga tgcaagcct ggtgctcaac tctggggcgt tcaactcagt 350

<210> 136
 <211> 399
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(399)
 <223> n = A,T,C or G

<400> 136
 tgtaccgtga agacgacaga agttgcatgg cagggacagg gcagggcoga ggccagggtt 60
 gctgtgattg tatccgaata ntctcgtga gaaaagataa tgagatgacg tgaacagcct 120
 gcagacttgt gtctgccttc aanaagccag acaggagggc cctgcctgcc ttggctctga 180
 cctggcgggc agccagccag ccacagggtg gcttcttctt ttatgtgtga caaonccaa 240
 aaaaatgcag agggccaggg tcagggtgna gtgggtangt gaccalaaaa caccagggtg 300
 tcccaggaa cggggcaaa qccatcccc cctcagoca gcattgcccc tggcgtgatg 360
 gctgcagang galqaagcag ccagntgttc tgcLqfsgt 399

<210> 137
 <211> 165
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(165)
 <223> n = A,T,C or G

<400> 137
 actggtgtgg tngggggtga tgctggtggt anaaqttean gtgacttean galgggtgtg 60
 ggaggagtg tgtgaacgta gggatqtaga ngtttggcc gtgcLaaatg agcttcggga 120
 ttggctggte ccactgqlqg tcactgtcat tggtagggLt cctgt. 165

<210> 138
 <211> 338
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(338)
 <223> n = A,T,C or G

<400> 138

actcactgga	atgccacatt	cacaaacagaa	tcagaggtct	gtgaaaacat	caatggctcc	60
tttaacttctc	cagtaagaat	cagggaacttg	aaatggaaac	gttaacagcc	acatgcccaa	120
tgctgggcag	tctcccatgc	cttccacagt	gaaggggctt	gagaaaaatc	acatccaatg	180
tcattgtgtt	ccagccacac	caaaagggtgc	ttgggggtga	ggggtggggg	catananggt	240
cangcctcag	gaagcctcaa	gttccattca	gctttgcvac	tgtacattcc	ccatntttas	300
aaaaactgat	gccttttttt	tttttttttg	taaaallo			338

<210> 139
 <211> 382
 <212> DNA
 <213> Homo sapien

gggaatcttg	gtttttggca	tctggtttgc	ctatagccga	ggccactttg	acagaacaaa	60
gaaagggact	tcagqlaaga	aggtgattta	cagccagcct	agtgcccgaa	gtgaaggaga	120
attcaaacag	acctcgtcat	tctgggtgtg	agcctggtcg	gctcaccgcc	tatcatctgc	180
atttgcttta	ctcagggtgc	acgggactct	ggccctctgat	gtctgtagtt	tcacaggatg	240
cottatllgt	cttctacccc	ccacaggggcc	ccctacttct	tcggatgtgt	ttttaataat	300
gtcagctatg	tgcacctcc	tcttcatgc	cctccctccc	tttctaccca	ctgctgagtg	360
gcctgggaact	tgtttaaaagt	gt				382

<210> 140
 <211> 200
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{200}
 <223> n = A,T,C or G

accaaanctt	ctttctggtg	tgttngattt	tactataggg	gtttngcttn	ttctaaanat	60
acttttccct	taacancttt	tgtaaagtgt	caggctgcac	tttgctccat	anaattattg	120
ttttcacatt	tcaacttgta	tgtgtttgtc	tcttanagca	ttggtgaat	caatatattt	180
atattcagca	taaaggagaa					200

<210> 141
 <211> 335
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{335}
 <223> n = A,T,C or G

actllatitt	caaaacactc	atatgttgca	aaaaacacat	agaaaaataa	agtttggttg	60
gggtgctgac	taaacttcaa	gtcacagact	tttatgtgac	agattggagc	agggtttgtt	120
atgcatgtag	agaacccaaa	ctaatttatt	aaacaggata	gaaacaggct	gtctgggtga	180
aatggttctg	agaacccatc	aattcacctg	tcagatgctg	atanactagc	tcttcagatg	240
tttttctacc	agttcagaga	tnggttaatg	actanttcca	atggggaaaa	agcaagatgg	300
attcacaaac	caagtaattt	taaacaaaga	cactt			335

<210> 142
 <211> 459
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_f ature

48

<222> {1}...{459}

<223> n = A,T,C or G

<400> 142

accagggttaa	tattgccaca	tatatccttt	ccaattgcgg	gctaaacaga	cgtgtattta	60
gggttggtta	aagacaaccc	agcttaatat	caagagaaat	tgtgaccttt	catggagtat	120
ctgatggaga	aaacactgag	ttttgacaaa	tottatttta	ttcagatagc	agtctgaton	180
cacatgggtc	aaacaacactc	aaataataaa	tcaaataina	tcagatgtta	aagattgggtc	240
ttcaaacatc	atagccaatg	atgccccgct	tgcctataat	ctctccgaca	taaaaccaca	300
tcaaacacctc	agtggccacc	aaaccattca	gcacagcttc	cttaactgtg	agctgtttga	360
agctaccagt	ctgagcacta	ttgactatnt	ttttcangct	ctgaatagct	ctagggatct	420
cagcangggg	gggaggaacc	agctcaacct	tggcgtant			459

<210> 143

<211> 140

<212> DNA

<213> Homo sapien

<400> 143

acatttcctt	ccaccaagtc	aggactcctg	gcttctgtgg	gagttcttat	cacctgaggg	60
aaatccaaac	agtcctctct	agaaagggaat	agtgctacca	accccaccca	tctccctgag	120
acctccgac	ttccctgtgt					140

<210> 144

<211> 164

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{164}

<223> n = A,T,C or G

<400> 144

acttcagtta	caacatocaa	taacaacatt	aagtgtatat	tgccatcttt	gtcattttct	60
atctatacca	ctctcccttc	tgaasacaan	aatcactanc	caatcactta	tacaaatttg	120
aggcaattta	tocatatttg	ttttcaataa	ggaaaaaaag	atgt		164

<210> 145

<211> 303

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{303}

<223> n = A,T,C or G

<400> 145

acgtagacca	tccaactttg	tatttgtaat	ggcaaacatc	cagnagcaat	t.cct.aaccaa	60
actggagggt	atttatcccc	aattatccca	ttcatttaaca	tgcctctctc	ctcaggctat	120
gcaggccagc	tctcatcaag	cggccacagg	atccagatac	taccatttgt	ataaactlca	180
gtaggqqagc	ccatcccaag	gacaggtcta	atcaaaggag	gaatatggac	ataagcccag	240
tagtcaaatn	tlgcttagct	gaascagcca	caasagactt	accgccgtgg	tgattancat	300
caa						303

<210> 146

<211> 327

<212> DNA

<213> Homo sapi n

<220>

<221> misc_feature
 <222> (1)...(327)
 <223> n = A,T,C or G

<400> 146
 actgcagctc aattagaagt ggtctctgac ttctcatcanc ttctccctgg gctccatgac 60
 actggcctgg agtgactcat tgcctctggt ggttgagaga gctcccttgc caacaggcct 120
 ccaagtcagg gctgggattt gtttcccttc cacattctag caacaatatg ctggccactt 180
 cctgaacagg gagggctgga ggagccagca tggacaagc tgccactttc taaagtatgc 240
 agacttgccc ctgggcctgt cacacctact gatgaccttc tgtgcctgca ggatggaatg 300
 taggggtgag ctgtgtgact ctatggt 327

<210> 147
 <211> 173
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(173)
 <223> n = A,T,C or G

<400> 147
 acattgtttt tttagataaa agcattgana gagctctcct taacgtgaca caatggaagg 60
 actggaacac ataccacat ctttgttctg agggataatt ttctgataaa gtcttgctgt 120
 atattcaagc acatatgtta tatattattc agttccatgt ttatagccta gtt 173

<210> 148
 <211> 477
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(477)
 <223> n = A,T,C or G

<400> 148
 acaaccactt tatctcatcg aatttttaac ccaaactcac tcaactgtgc tttctatcct 60
 atgggatata ttatttgatg ctccatttca tcacacatat atgaataata cactcatact 120
 gccctactac ctgctgcaat aatcacattc ccttctgtgc ctgaccctga agccattggg 180
 gtggctctag tggccatcag tccangcctg caccttgagc ccttgagctc cattgctcac 240
 nccancccac ctcaaccgac ccatcctctt acacagctac ctctctgtgc tctzaccoca 300
 tagattatnt cczattcaq tcaattcaq tactattaac actctaccng acatgtccag 360
 caccactggg aagccttctc cagccaacac acacacacac acacncuac acacacatat 420
 ccaggcacag gttacclcal ctccacaatc acccctttaa ttaacatgcl atggtgg 477

<210> 149
 <211> 207
 <212> DNA
 <213> Homo sapien

<400> 149
 Acagttgtat tataatatca agaaataaac ttgcaatgag agcatttaag agggagaagac 60
 taacgtatct tagagagcca aggaagggtt ctgtggggag tgggatgtaa ggtggggcct 120
 gatgataaat aagagtcagc caggtaagtg ggtgggtgtg tatgggcaca gtgaagaaca 180
 tttcaggcag agggaaacag agtgaaa 207

<210> 150
 <211> 111
 <212> DNA
 <213> Homo sapien

50

<220>
 <221> misc_feature
 <222> (1)...(111)
 <223> n = A,T,C or G

<400> 150
 accttgatctt catttgcctgc clgatggaaa cccaactatc taatttagct aaaacatggg 60
 cacttaaatg tggkcaagtgt ttggacttgt taactantgg catctttggg t 111

<210> 151
 <211> 196
 <212> DNA
 <213> Homo sapien

<400> 151
 agcgcggcag gtcatattga acattccaga tacctatcat tactcgatgc tgttgataac 60
 agcaagatgg ctttgaactc agggtcacca ccagctattg gaccttacta tgaanaaccat 120
 ggataccaac cggaaaaccc ctatcccgca cagcccactg tggccccac tgtctacgaq 180
 gtgcacccgg ctacgt 196

<210> 152
 <211> 132
 <212> DNA
 <213> Homo sapien

<400> 152
 acaqcauttt cccatgcag aagggagaaa ttccataatg taggagaaa ataacagaac 60
 cttccccctt tccatcagtg gtggaaacct gatgctttat gttagacagga atagaaccag 120
 gaggagttt gt 132

<210> 153
 <211> 285
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(285)
 <223> n = A,T,C or G

<400> 153
 acaanaccca naganaggca ctggccgtgg tgtcatggcc tccaaacatg aaagtgtcag 60
 ctltctgctct tatgtccctca tctgacaact ctttaccatt tttatcctcg ctacgcagga 120
 gccatcaat aaagtccaaa gtcttggact tggccttggc ttggaggaag tcatcaacac 180
 cctggctagt gagggtgagg cgcgcctcct ggatgaaggc atctgtgaag tctgcacca 240
 gtctgcaggc cctgtggaag cgcgcctcac acggagtnag gaatt. 285

<210> 154
 <211> 333
 <212> DNA
 <213> Homo sapien

<400> 154
 accacagtc tgttggggca gggcttuatg accctttctg tggaaagcca tattalocac 60
 accccaaatt ttcccttana tatcttlaac tgaaggggtc agcctcttga clqcaagac 120
 cctaagccgg ttacacagct aectccact ggccttgatt tctgaattg ctgctgctt 180
 attggcacag gagtccagg tcltcaact cctcctcctg tggaaacgaga ctctgattt 240
 agtttcacaa attctcgggc cactcctca ttgctcctct gasataaat ccggagaaat 300
 gtcaggcctg tctcatcctc alggatcttc cgg 333

<210> 155

51

<211> 308
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(308)
 <223> n = A,T,C or G

<400> 155
 actggaaala ataaaccaca catcacagtg ttgtgtcaaa gatcatcagg gcatggatgg 60
 gaaagtgttt tgggaactgt aaagtgccta acacatgac gatgattttt gttataatat 120
 ttgaatcacg gtgcatacaa actctcctgc ctgctcctcc tgggccccag cccagcccc 180
 atcacagctc actgcctgtt tcatccaggc ccagcatgta gtggctgatt cttcttggct 240
 gcttttagcc tccaaagtt tctctgaagc caaccaaaacc totangtgta aggcattgctg 300
 ggcctggt 308

<210> 156
 <211> 295
 <212> DNA
 <213> Homo sapien

<400> 156
 acctgtctcg gtgcttggaa catattagga actcaaaata tgagatgata acagtgccca 60
 ttattgatta ctgagagaac tgttagacat ttgattgag allttclaca cagggaactga 120
 gaataggaga ttatgttttg cctcatatt ctctccatc ctcccttgcct cttctatgt 180
 ctaatafatc ctcaatcaaa taaggctagc ataatcagga aatcgaccaa ataccatat 240
 aaaaccagat gtctatcctt aaqattttca aatcgaaaac aaattaacag actat 295

<210> 157
 <211> 126
 <212> DNA
 <213> Homo sapien

<400> 157
 acaagtttaa atagtgtgt catgtgtcat gtgctgaaat gtgaaatcaa ccacatttcl 60
 gaagagcaaa acaattctg tcatgtaatc totatcttgg gtcgtggtga tctctgtccc 120
 cttagt 126

<210> 158
 <211> 442
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1)...(442)
 <223> n = A,T,C or G

<400> 158
 acccactggt ctgggaaca cccatcctta atacgatgat tttctgtcg tgtqaaatg 60
 aancagcag gctgcacctg gtcagtccct ccttccagag aaaaagagat ttgagaaagt 120
 gcttgggtaa ttcaacatta atttccctcc ccacacctcc ttagtcttcc cttaatatat 180
 ctggttggtc tgaccaaagc aggtcatggt ttgtttagaa tllgggatcc cagtgaaag 240
 natgtttgta gcttgcata cttagucctt cccacgcaca aacggagtg cagctggtg 300
 ccaaccctgt ttccccagtc cactgagaca gattcaccag gcaggatctt ggaagctgga 360
 nacagacggg ctctttgcag agccgggact ctgagangga catgaggggc tctgctctg 420
 tttcattct ctgtgtcct gt 442

<210> 159
 <211> 498
 <212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(498)

<223> n = A,T,C or G

<400> 159

acttccagg	aacgttgtt	tttccgttg	gcctgaact	atgggtgac	ttgtaggtt	60
tccaacaaga	actgaggtt	cagagcggt	agggaaagt	gctgttccg	ttgcacctg	120
gctgctgtg	actgttgtt	attcctcact	acggcccaag	gttgtggac	tggcanaaag	180
gtgtgtgtt	gganttgag	tggggcggt	gtggtaggt	gtgggtctt	caacaggggc	240
tgctgtggt	cggggangt	aangtgttt	gtcacttgag	cttggccagc	tctggaaagt	300
antanattct	tctgaaggc	cagcgcttgt	ggagutggca	nnggtcantg	ttgtgtgtaa	360
cgaaccagt	ctgctgtgg	tgggtgtano	tcctccaca	agcctgaag	tatggtgten	420
tcaggtana	atgtgtttt	agtgtccctg	ggcngctgt	qaaggttgt	natgttcacc	480
aagggaalaa	gctgtgtt					498

<210> 160

<211> 380

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(380)

<223> n = A,T,C or G

<400> 160

acctgcattc	agcttccctg	ccaaactcac	agggagacat	caacctctag	acagggaaac	60
agcttcaggc	tacttccagg	agacagagcc	acacagcagc	aaacaaata	tccctgtcct	120
ggagcatggc	atagaggaag	ctganaaatg	tggggctctg	ggaaagccatt	tgagtctggc	180
cactagacat	ctcatcagcc	acttgtgtga	agagatgccc	catgacccca	gatgcctctc	240
ccacccctac	ctccctctca	caacattgag	ctttccactc	tgtataattc	taacatctctg	300
gagaaaaatg	gcagtttgac	cgaacctgtt	cacaacggta	gaggctgatt	tctaacgaaa	360
cttgtagaat	gaagcctgga					380

<210> 161

<211> 114

<212> DNA

<213> Homo sapien

<400> 161

actccacatc	ccctctgagc	aggcggttgt	cgttcaagggt	gtatttggcc	ttgcctgtca	60
cactgtccac	tggccctta	tccacttggt	gcttaalccc	tggaaagagc	atgt	114

<210> 162

<211> 177

<212> DNA

<213> Homo sapien

<400> 162

acttllciga	tcgaatcaca	tgatacttag	tgtagtttta	atatcctcat	atatatcaaa	60
gttttaetac	tctgataatt	ttgtaaacca	ggtaaccaga	acatccagtc	atacagcttt	120
lggtgatata	taacttggca	ataaccagat	ctggtgatac	ataaaactac	tcactgt	177

<210> 163

<211> 137

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature
 <222> (1)...(137)
 <223> n = A,T,C or G

<400> 163
 cattatataca gacaggcgtg aagacattca cgacaaaaac gcgaatttcl atcccgtagc 60
 canagaaggc agctacggct actctacat cctggcgtgg gtggccttcg cctgcacctt 120
 catcagcggc atgatgt 137

<210> 164
 <211> 469
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(469)
 <223> n = A,T,C or G

<400> 164
 cttatcacaa tgaatgttct cctgggcagc gttgtgatct ttgcacacct cgtgacttta 60
 tgcaatgcct catgctatct cctacctaat gagggagttc caggagattc aaccaggaaa 120
 tgcattggatc tcaaaaggaa caaacaccca ataaactcgg agtggcagac tgacaactgt 180
 gagacatgca ctgtgtcaga aacagaaatt tcatgttgca cctttgtttc tacacctgtg 240
 ggttatgaca sagaceactg ccaaaagaatc ttaagaagg aggaactgan gtatatcgtg 300
 gtggagaaag aggacccaaa aaagaacctg tctgtcagtg aatggataat ctantgtgct 360
 totagtaggc acagggctcc caggccaggc ctcaattctcc tctggcctct aatagtcaat 420
 gattgtgtag ccatgcctat cagtaaaaag atntttgagc aaacacttt 469

<210> 165
 <211> 195
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(195)
 <223> n = A,T,C or G

<400> 165
 acagtttttt atanatateg acattgccgg caettgtgtt cagtttcaia aagctgggtg 60
 atccgctgtc atccactatt ccttggctag agtaaaaatt attolctatg cccatgtccc 120
 tgcaggccgc ccgcccgtag ttctcgtccc agtngtcttg gcacacaggg tgcaggact 180
 tctctgaga tgagt 195

<210> 166
 <211> 383
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(383)
 <223> n = A,T,C or G

<400> 166
 acatcttagt agtgtggcac atcaggaggc catcagggtc acagtcactc atagcctcgc 60
 cgaggctcga gtccacacca ccgggtgtagg tgtgtctaat cttgggcttg gcgcccacct 120
 ttggagaagg gatatgctgc acacacatgt caacaaagcc tgtgaactcg ccaagatt 180
 ttgcagacc agcctgagca agggggcgat gttcagcttc aglccctct tctcaggtg 240
 gatgccaacc tctgtatagg tccgtgggaa gctgggtgccc acctcaccta caacctgggc 300
 gangatctta taaagaggct ccnagataaa ctccacgaaa cttctcttgg agctgctagt 360

ngggggccttt ttggtgaact ttc

383

<210> 167
 <211> 247
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc feature
 <222> (1)...[247]
 <223> n = A,T,C or G

<400> 167

acagagccag	accttggcca	tzaatgaanc	agagattaag	actaaacccc	aagtccganat	60
tggagcagaa	actggagcaa	gaagtggggc	tggggctgaa	gtagagacca	agggccactgc	120
catanccata	cacagagcca	actctcaggc	caaggcnatg	gttggggcag	anccagagac	180
tcaelctgan	tccaaaatgg	tggctggaa	actggtcatg	acanaaggcag	tgactctgac	240
tgangtc						247

<210> 168
 <211> 273
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc feature
 <222> (1)...[273]
 <223> n = A,T,C or G

<400> 168

acttctaagt	tttctaqaag	tggauggatt	gtantcatcc	tgaaaatggg	tttacttcaa	60
aetccctcan	ccttgltcct	cacnactgct	tatactgana	gtgtcatggt	tccacaaagg	120
gotgacccct	gagccctgna	tttcaactcat	ccttgagaag	ccctttccag	taggggtgggc	180
aattcccaac	ttccttgcca	caagcttccc	aggtttctct	ccctggaaaa	ctccagcttg	240
agtccccagct	acactcatgg	gttgccctgg	gca			273

<210> 169
 <211> 431
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc feature
 <222> (1)...[431]
 <223> n = A,T,C or G

<400> 169

acagccttgg	cttccccaaa	ctccacagtc	tcagtgcaga	aagatcatct	tccagcagtc	60
agctcagacc	agggkcaaa	getgtgacal	caacagtttc	tggtttcaga	acaggttcta	120
ctactgtcaa	atgacccccc	atacttccic	aaaggctgtg	gtaggttttg	cacaggtgag	180
ggcagcagaa	agggggant	tactgatgga	cacctctctc	tutgtatact	ccacactgac	240
cttgccatgg	gcasaggccc	ctaccacaaa	aaacaatagga	tcactgctgg	gcaccagctc	300
acgcacatca	ctgacaaccg	ggatggaaaa	agaaatgcca	actltoatac	atccaaactgg	360
aaagtgatct	gatactggat	tcttaattac	ctlcaaaagc	ttctgggggc	catcagctgc	420
tcgaacactg	a					431

<210> 170
 <211> 266
 <212> DNA
 <213> Homo sapien

 <220>

55

<221> misc_feature
 <222> (1)... (266)
 <223> n = A, T, C or G

<400> 170
 acctgtgggc tgggctgtta tgectgtgcc ggctgctgaa agggagttca gaggtggagc 60
 tcaaggagct ctgcaggcat tttgccaanct ctctccanag canagggagc aacctacact 120
 ccccgctaga aagacaccag attggagtcg tgggaggggg agttgggggtg ggcatttgat 180
 gtatcttgt cacttgaatg aangagccag agaggaanga gacgaanatg anattggcct 240
 tcaasgctag gggctctggca ggtgga 266

<210> 171
 <211> 1248
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)... (1248)
 <223> n = A, T, C or G

<400> 171
 ggcagccaaa tcaataaagg cgaggactgc agcccgcact cgcagccctg gcaggcggca 60
 ctggtcatgg aaaaacgaatt gttctgctcg ggcgacctgg tgcctccgca gtgggtgctg 120
 tcagccgcac actgtttcca gaagtgaagt cagagctcct acaccatcgg gctgggacctg 180
 cacagtcttg aggcgagcca agagccaggg agccagatgg tggaggccag cctctccgta 240
 cggcaccacg agtaccacag acccttgctc gctaaccgac tcatgtctcat caagttggac 300
 gaatccgtgk ccgagctctga caccatccgg agcatcagca ttgcttcgca gtgccctacc 360
 gcgggggaact cttgcctcgt ttctggctgg ggtctgctgg cgaacggcag aatgcctacc 420
 gtgctgcagt gcgtgaacgt gtccgttggtg tctgaggagg tctgcagtaa gctctatgac 480
 ccgctgtacc accccagcat gttctgcgcc ggccggaggc aagaccagaa ggactcctgc 540
 aacggtgact ctggggggcc cctgatctgc aacgggtact tgcagggact tgtgtctttc 600
 ggaaaagccc cgtgtggcca agttggcgtg ccagggtgtt acacunaact ctgcaaatlc 660
 actgagtggg tagagaaaac cgtccaggcc agttaactct ggggactggg aaccatgaa 720
 attgaccccc aaatacatcc tgcggagagg attcaggaat atctgttccc agccctctcc 780
 cctccaggcc caggagtcga ggcccccaga cctctctccc tcaaaccaag ggtacagatc 840
 cccagccccc cctccctcag aaccaggagt ccagaccccc cagccctccc tccctcagac 900
 ccaggagtcc agccctctcc cctccagacc caggagtcga gacccccag cccctctctc 960
 ctccagaccca ggggctccag ccccccaccc ctctctctcc agactcagag gtccaagccc 1020
 ccaacccttc attcccccaga cccagagggtc caggctccag cccctctctc ctccagaccca 1080
 ggggtccaat gccacctaga ctntccctgt acacagtgcc ccttgttgge acgttgaccc 1140
 aaccllacca gttggttttt ctttttngt ccctttcccc tagatccaga aataaagttt 1200
 aagagaagng caaaaaaaa aaaaaaaa aaaaaaaa aaaaaaaa 1248

<210> 172
 <211> 159
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)... (159)
 <223> Xaa = Any Amino Acid

<400> 172
 Met Val Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro
 1 5 10 15
 Leu Leu Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser
 20 25 30
 Glu Ser Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr
 35 40 45
 Ala Gly Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly

50	Arg Met Pro Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu	60
65	Glu Val Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe	75
		80
		85
		90
		95
		100
		105
		110
		115
		120
		125
		130
		135
		140
		145
		150
		155

<210> 173

<211> 1265

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1265)

<223> n = A,T,C or G

<400> 173

ggcagcccg	actcgcagcc	ctggcagggc	gcactggtca	tggaaaacga	attgttcctgc	60
tcgggagctcc	tggtgcaccc	gcagtgaggc	ctgtcagccg	cacactgttt	ccagaaactcc	120
tacaccatcg	ggctgggccc	gcacagtctt	gaggccgacc	aagagccagg	gagccagatg	180
gtggaggcca	gcctctccgt	acggcaacca	gagtacaaca	gaccttgct	cgctaaccac	240
ctcatgctca	tczagttgga	cgaatccgtg	tcagagtctg	acaccatccg	gagcatcagc	300
attgcttgcg	agtgccttac	cgcgggggaa	tcttgccctg	tttctggctg	gggtctgctg	360
gcgaacggcg	agctcagcgg	tgtgtgtctg	ccctcttcaa	ggaggtcctc	tgcccagtcg	420
cgggggctga	ccacagagtc	tgcgtccccc	gcagaatgcc	taccgtgctg	cagtgcgtga	480
acgtgtcggc	gggtgtctga	gaggtctgca	gtaagctcta	tgaccgctg	taccaccca	540
gcctgtttct	cgcggggcgg	gggcaagacc	agaaaggact	ctgcacccgt	gactctgggg	600
ggccctcga	ctgcaacggg	tacttgccgg	gccttgctgc	cttcgggaac	gccccgtgtg	660
ggcaagttcg	cgtgccaggt	gtclacacna	ccctctgcga	atcactgag	tggtatgaga	720
aaaccgtcca	ggccagttaa	ctctggggac	tgggaaaccca	tgaactlgac	ccccaaatac	780
atcctgcgga	aggaattcag	gaatatctgt	tcccagcccc	tctcctcca	ggccnaggag	840
tccaggcccc	cagcccctcc	tccctcaaac	caagggtaca	gatccccagc	ccctctccc	900
tcagaccrag	gagtccagac	cccccagccc	ctcctccctc	agacccagga	gtccagcccc	960
tctcctntca	gacccaggag	tccagacccc	ccagccccct	ctcctcaga	cccaggggtt	1020
gaggccccca	acccctcctc	cttcagagtc	agaggtccaa	gcccccaacc	cctcgttccc	1080
cagacccaga	ggttnaggtc	ccagcccctc	ttccttcaga	cccagnggtc	caatgccacc	1140
tagattttcc	ctgnacacag	tgcccccttg	tggmangttg	acccaacctt	accagttggc	1200
ttttcatttt	tngtcccttt	cccctagatc	cagaaataaa	gtttaagaga	ngngcaaaaa	1260
aaaaa						1265

<210> 174

<211> 1459

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1459)

<223> n = A,T,C or G

<400> 174

ggtcagccgc	acactgtttc	cagaagtgag	tgacagagtc	ctacaccatc	gggctgggcn	60
tgacagctct	tgaggccgac	caagagccag	ggagccagat	gggtggaggcc	agcctctncc	120
tacggcacc	agagtacaac	agacccttgc	tcgctaacga	cctcatgctc	atcaagttgg	180

acgaatccgt	gtccgagttct	gacacccatcc	ggagccatcag	catttgcttcg	cagtgcctcta	240
cgcgggggaa	ctcttgccctc	gtttctggct	ggggctctgct	ggcgaaacggt	gagctcacgg	300
gtgltgtctct	gcccctcttca	aggaggtctct	ctgcccagtc	gggggggctg	acccagagct	360
ctgcgtccca	ggcagaatgc	ctaccgtgct	gcagtgctg	aacgtgctgg	tggtgtclga	420
ngaggtctgc	antaagctcl	atgacccgct	gtaccacccc	ancatgttcl	gcgcccggcg	480
agggcaagac	cagaaggaat	cctgcaacgt	ggagaggggg	aaaggggagg	gcaggcgact	540
caggggaagg	tgagggaagg	ggagacagag	acacacaggg	ccgcatggcg	agatgcagag	600
atggagagac	acacagggag	acagtgacaa	ctagagagag	aaantgagag	aaacagagaa	660
ataaacacac	gaataaagag	aagcagaagg	agagagaaac	agaaacagac	atggggaggc	720
agaaacacac	acacatagaa	atgcagttag	ccttccaaca	gcctggggcc	tgagggcggt	780
gacctccacc	caatagaaaa	tectcttata	acttttgact	ccccaaaaac	ctgactagaa	840
atagcctaact	gttgacgggg	agccttacca	ataacataaa	tagtngattt	atgcatacgt	900
tttatgcat	catgatatac	ctttgttgga	attttttgat	atttctaagc	tacacagttc	960
gtctgtgaat	ttttttaaat	tggtgcaact	ctcctaaaaat	ttttctgatg	tgtttattga	1020
aaaaatccaa	gtataagtgg	acttggtgat	tcaaaccagg	gttggtcaag	ggtcaactgt	1080
gtaccacagag	ggaaacagtg	acacagattc	atagaggtga	aacacgaaga	gaaacaggaa	1140
aaatcaagac	tctacaaaga	ggctgggcag	ggtggctcat	gcctgtaatc	ccagcacttt	1200
gggagggagag	gcagggcagat	cacttgaggt	aaggagttca	agaccagcct	ggccaaaatg	1260
gtgaaatctct	gtctgtacta	aaaatacaaa	agttagctgg	atatgggtgg	aggcgccctgt	1320
aatccacgct	acttgggag	ctgaggcag	agaaattgct	gaatatggga	ggcagaggtt	1380
gaagtgaagt	gagatcacac	cactatactc	cagctggggc	aacagagtaa	gactctgtct	1440
caaaaaaaaa	aaaaaaaaaa					1459

<210> 175

<211> 1167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(1167)

<223> n - A,T,C or G

<400> 175

ggcagccct	ggcagggggc	actggctcatg	gaaaaagaaat	tggtctgtctc	gggcgtcctg	60
gtgcacccgc	agtgggtgct	gtcagccgca	cactgtttcc	agaactccta	caccatcggg	120
ctgggctctgc	acagctctga	ggccgaccaa	gagccaggga	gccagatggt	ggaggccagc	180
ctctccgtac	ggcaccacga	gtacaacaga	ctcttgctcg	ctaacgacct	catgctcatc	240
aagtlggacg	aatccglgtc	cgagctctgac	accatccggg	gcatcagcat	tgcttcgcag	300
lqccctaccg	cgaggaactc	ctgcccctgt	tctgcttqg	gtctgctagg	gaacgycaga	360
atgcctacng	tgctgcactg	cgtgaacgtg	lccgtgggtg	ctgaggengt	ctgcagtaag	420
ctctatgacc	cgtgtaccca	ccccagcatg	tcttgggcng	gcggaggggc	agacacagag	480
gactcctgca	acggtgaactc	tgggggggccc	ctgatctgca	acgggtactt	gcagggcctt	540
gtgtctttcg	gaaaagcccc	gtgtggccaa	cttggcgtgc	cagggtgtctc	caccacacctc	600
tgcaaatcca	ctgagtggtat	agagaaaaac	gtccagncca	gttaactctg	gggactggga	660
acccatgaaa	ttgacccccca	aatacatcct	gcgggaangaa	ttcagggaata	tctgttccca	720
gcccctctct	cctcaggccc	aggagtccag	gccccccagcc	cctcctccct	caaaccaagg	780
gtacagatcc	ccagcccctc	ctccctcaga	cccaggagtc	cagaccccccc	agcccctcnt	840
ccntcagacc	caggagtcca	gcccctcctc	cntcagacgc	aggagtccag	accccccagc	900
ccntcntccg	tcagacccag	gggtgcaggc	ccccaacccc	tcntccntca	gagtcagagg	960
tccaaagccc	caaccccctcg	ttccccagac	ccagaggtnc	aggtcccagc	ccctcctccc	1020
tcagacccag	cgggtccaatg	ccacctagan	tnccctgtta	cacagtgcgc	ccttgtggca	1080
ngttgaccca	accttaccag	ttggttttct	attttttgtc	cctttccctc	agatccagaa	1140
ataaagtnta	agagaagcgc	aaaaaaa				1167

<210> 176

<211> 205

<212> PRT

<213> Homo sapien

<220>

<221> VARIANT

<222> (1)...(205)

<223> Xaa = Any Amino Acid

<400> 176

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Leu Leu Leu
 50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met
100      105      110
Pro Thr Val Leu His Cys Val Asn Val Ser Val Val Ser Glu Xaa Val
115      120      125
Cys Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala
130      135      140
Gly Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly
145      150      155      160
Pro Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys
165      170      175
Ala Pro Cys Gly Gln Leu Gly Val Pro Gly Val Tyr Thr Asn Leu Cys
180      185      190
Lys Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Xaa Ser
195      200      205

```

<210> 177

<211> 1119

<212> DNA

<213> Homo sapien

<400> 177

```

gagcactcgc agccctggca ggcggcactg gtcattgaaa acgatttgtt ctgctcgggc      60
gtcctggtgc atccgcagtg ggtgctgtca gccgcacact gtttccagaa clectacacc      120
atcgggotgg gcctgcacag tcttgaggcc gaccagagac cagggagcca gatggtggag      180
gccagcotct ccgtacggca cccagagtac aacagaccct tgcctcgtca cgaactcatg      240
ctcatcagtg tggacgaatc cgtgtccgag tctgacacca kccggagcat cagcattgct      300
tcgcagtgcc ctaccgcggg gaactcttgc ctggtttctg gctgggggtct gctggcgaaac      360
gatgctgtga ttgccatcca gtcccagact glgggagact gggagtgtga gaagctttcc      420
caacuctggc agggttgtac cattkcgga acttccagtg caaggacgtc ctgctgcate      480
ctcactgggt gctcactact gctcactgca tccccggaa cactgtgatc aactagccag      540
uaccatagtt ctccgagtc aqactatcat gattactgtg ttgactgtgc tgtctattgt      600
actaaccctg cngatgttta ggtgaaatta gcgtcacttg gcctcaacca tottggtatc      660
cagttatcct cactgcaattg agatttcctg cttcagtgtc agccattccc acataatttc      720
tgactacag aggtgagggg tcatatagct ctccaaggat gctggtactc cctccacaaa      780
ttcatttctc ctggtgtagt gaaaggtgcg cctctggag cctcccaggg tgggtgtgca      840
ggtcacaatg atgaatgat gatcgtgttc ccattaccca aagcctttta atccctcatg      900
ctcagtaaac cagggcaggt ctgacatttc ttcatttagt gtatgctgtc cattcatgca      960
accacctcag gactcctgga ttctctgcct agttgagctc ctgcatgctg cctccttggg      1020
gaggtgaggg agagggccca tggttcaatg ggatctgtgc agttgtanac cattaggtgc      1080
ttaataaaca gaagctgtga tgttaaaaaa aaaaaaaa      1119

```

<210> 178

<211> 164

<212> PRT

<213> Homo sapi n

59

<220>

<221> VARIANT

<222> (1)...(164)

<223> Xaa = Any Amino Acid

<400> 178

```

Met Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp
 1      5      10      15
Val Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu
 20      25      30
Gly Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val
 35      40      45
Glu Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu
 50      55      60
Ala Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser
 65      70      75      80
Asp Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly
 85      90      95
Asn Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Asp Ala Val
100      105      110
Ile Ala Ile Gln Ser Xaa Thr Val Gly Gly Trp Glu Cys Glu Lys Leu
115      120      125
Ser Gln Pro Trp Gln Gly Cys Thr Ile Ser Ala Thr Ser Ser Ala Arg
130      135      140
Thr Ser Cys Cys Ile Leu Thr Gly Cys Ser Leu Leu Leu Thr Ala Ser
145      150      155      160
Pro Gly Thr Leu

```

<210> 179

<211> 250

<212> DNA

<213> Homo sapien

<400> 179

```

ctggagtgcc ttggtgtttc aagccctgc aggaagcaga atgcaccttc tgaggcacct      60
ccagctgcc ccggccgggg gatgcagagc tcggagcacc ctgcccggc tgtgattgct      120
gccaggcact gtccatctca gctttctgt cctttgtct ccggcagcg cttctgtctg      180
aagttcatat ctggagcctg atgtcttaac gaataaaggc cccatgctcc aaccgaaaaa      240
aaaaaaaaaa

```

<210> 180

<211> 202

<212> DNA

<213> Homo sapien

<400> 180

```

actagtccag tgtggtggaa ttccattgtg ttgggcccac cacaatggct acctttaaca      60
tcaacagagc ccggccctgt cccgtgccc acgctgctgc taacgacagt atgatgctta      120
ctctgtact cggaaactat ttttatgtat ttaatgtatg ctttcttgtt tataaatgcc      180
tgatttaaaa aaaaaaaaaa aa

```

<210> 181

<211> 558

<212> DNA

<213> Homo sapien

<220>

<221> misc featur

<222> (1)...(558)

<223> n = A,T,C or G

```

<400> 181
tccttttggk naggttttkkg agacacccck agacctwaan ctgtgtcaca gacttcynqg      60
aatgttttagg cagtgcctagt aatttcytcg taatgattct gttattactt tccctnattct      120
ttattcctct ttcttctgaa gattaatgaa gttgaaaatt gaggtggata aatac000000      180
ggtagtgtga tagtataagt atctaagtgc agatgaaagt gtgttatata tatcccttca      240
aaattatgca agttagtaat tactcagggt taactaaatt actttaatat gctgttg000      300
ctactctgtt ccttggctag aaaaaattat aaacaggact ttgttagttt gggag00000      360
attgataata ttctatgttc taaaagttgg gctatacata aattattaag aatatggaw      420
ttttattccc aggaatatgg kgttcatttt atgaatafta csurggatag awgtwlgagt      480
aaaaycagtt ttggtwaata ygtwaatatg tcmteaataa acaakgcttt gacttatttc      540
caaaaaaaaa aaaaaaaa

```

```

<210> 182
<211> 479
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(479)
<223> n = A,T,C or G

```

```

<400> 182
acagggwttk grgatgcta agaccccrga rwygtttga tccaacctg gottwttttc      60
agaggggaaa atggggccta gaagttacag macatytagy tgggtggmfg gcacccctgg      120
ctcacacag astcccgagt agctgggact acaggcacac agtcactgaa gcaggccctg      180
ttwgaattc acgttgccac ctccaactta aacattcttc atatgtgatg tcccttagtca      240
ctaaggttaa actttccac ccagaaaagg caacttagat aaaatcttag agtaacttca      300
tacttttcta agtctcttcc cagcctcact kkgagtccm cytgggggtt gataaggaant      360
ntctcttggc ttctc0aata aartctctat ycatctcatg ttt0atttgg ta0gc00000      420
awtgatgare aaattaaaat gttctggtty mactttaaaa 000000000 000000000      479

```

```

<210> 183
<211> 384
<212> DNA
<213> Homo sapien

```

```

<400> 183
aggcgggagc agaaagctaaa gccaaagccc aagaagagtg gcagtgccag cactgggtgcc      60
aglc0cagla ccaataacag tgccagtgcc agtgccagca ccagtgggtg cttcagtgct      120
ggtgcc0gcc tgacc0gccac tctcacattt gggctctt0g ctggccttgg tggagctggg      180
gccagc0cca gtggcagctc tgggtg0ctgt ggtttctcct acaagt0aga ttttagatat      240
tgtaatcct gccagtcttt ctcttcaagc caggggtgc0 cctcaga0ac ctactcaaca      300
cagcactcta ggcagccact atcaatcaat tgaagttgac ac0ctgcatt aratctattt      360
gccatttcaa aaaaaaaaaa aaaa

```

```

<210> 184
<211> 496
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(496)
<223> n = A,T,C or G

```

```

<400> 184
acugaatttg g0ccgctggc ttataagcga tcatgttynt ccrgtat0ac ctcaacgagc      60
agggag0l0g 0glctctacg ctgaagaaat ttgacccgat gggacaacag acctgctcag      120
cccatctct0c t0gggtctcc ccagatgaca aatactct0g acaccgaatc accatcaaga      180
aacgctt000 ggtgctcatg acccagcaac cgcgc0ctgt cctctgaggg tcccttaaac      240
tgalgtcttt tctgccac0t gttaccc0tc ggagact0cg taac00aaact cttcggactg      300

```

61

tgagccctga	tgcctttttg	ccagccatag	tctttggcat	ccagtcctctc	gtggcgattg	360
attatgcttg	tgtgagggca	tcctgggtgg	atcaccacata	aaagggaacac	atttgaacttt	420
ttttctcat	attttaaatt	actacmagaw	tcttwwagaw	waatqawtt	gaaaaactst	480
taaaaaaaaa	aaaaaa					496

<210> 185
 <211> 384
 <212> DNA
 <213> Homo sapien

<400> 185						
gctggtagcc	tatggcgkcg	cccacggagg	ggctectgag	gccacggrac	agtgaacttcc	60
caagtatcyt	gcgcagcgctc	ttctacogto	cctacctgca	gatcttcggg	cagattcccc	120
aggaggscat	ggacgtggcc	ctcatggagc	acagcaactg	ytctgctggag	cccggtctct	180
gggcacaccc	tcctggggcc	caggcgggca	cctgctctc	ccagtatgcc	aactggctgg	240
tgggtgctgt	cctgctcatc	ttcctgctcg	tggccaacat	cctgctggtc	aacttgcctc	300
ttgccatgtt	cagttacaca	ttcggcaaaq	tacagggcaa	cagcgatctc	tactgggaag	360
ggcgacgctt	accgctcat	cgg				384

<210> 186
 <211> 577
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(577)
 <223> n - A,T,C or G

<400> 186						
gagttagctc	ctccacaacc	ttgatgaggt	cgtctgcagt	ggcctctctc	ttcataccgc	60
tnccatogtc	atactgtagg	tttgccacca	cytcctggca	tcttggggcg	gcntaatatt	120
ccaggaaact	ctcaatcaag	tcaccgtcga	tgaaccctgt	gggctgggtc	tgtcttccgc	180
tcgggtgtga	aggatctccc	agaaggagtg	ctcgatcttc	cccacacttt	tgatgacttt	240
attgagtcga	ttctgcatgt	ccagcaggag	gttgtaccag	ctctctgaca	gtgaggtcac	300
cagccctatc	atgcccgtga	mcgtgcccga	garcaccgag	ccttgtgtgg	gggkkgaaat	360
ctcaccacga	ttctgcatta	ccagcagagcc	gtggcacaag	acattgacaa	actcgcccag	420
gtggaaaaag	amcamctcc	ggargtqctn	gcgctctctc	gtcmgttgg	ggcagcgtw	480
tccttttgc	acacacacac	gttaagggc	tttccagccc	ccagaaantt	gtcatcatcc	540
aaatntctgc	acagcactna	tcagllqgg	attaaat			577

<210> 187
 <211> 534
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(534)
 <223> n = A,T,C or G

<400> 187						
aacatcttcc	tgtataatgc	tgtgtaatat	cgatccgatn	ttgtctgstg	agaatycatw	60
actkqgaaaa	gmaacattau	agcctggaca	ctggtattaa	aattccacaat	atgcaacact	120
ttazacagt	tgtcaatctc	ctcccyynac	tttgtcatca	ccagtcctgg	aakaagggta	180
tgccttatcc	acacctgtta	aaaggacqct	aaacattttt	gattcaacat	cttttttttt	240
gacacaaagtc	cgaaauaaagc	aaagctaaa	agllatyaat	ttgttagcna	attcaacttc	300
ttcatgggac	agagccatyt	gatttcaaaa	gcnaatttga	laatattgag	cttygggagc	360
tgalalttga	gcggaaggagc	agcctttcta	cttcaacaga	cccaaccccc	ttcatattg	420
ggatgttnac	naaagtwtatg	tctctwacag	atgggatgct	tttgaggcaa	ttcttctctg	480
aggaclcccc	agtlctattta	ccacttgcac	aagaaagcgt	tttcttctct	agga	534

62

<210> 188
 <211> 761
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{761}
 <223> n = A,T,C or G

<400> 188
 agaaaccagt atctctnaaa acaacctctc ataccttgtg gacctaatTT tgtgtgcgtg 60
 tgtgtgtgog cgcataattat atagacaggo acatcttttT tacttttTga aaagcttatg 120
 cctctttggg atctatatct gtgaaagtTT taatgatctg ccataatgtc ttggggacct 180
 ttgtctttctg tgtaaatggt actagagaaa acacctatnt tatgagtcaa tctagttngt 240
 ttatttogac atgaaggaaa ttctungctn ccaacacTna caaacTctcc clkgackarg 300
 ggggacaaag aaagcnaaa ctgancataa caaacctwa cctggTgaga arttgcataa 360
 acagaaatwr gytgttatat tgaarnacag catcatTaa rmgttwktT wttctccctt 420
 gcaaaaaaca tgtacngact tcccttTgag laatgccag ttgttttttT tatnataaaa 480
 cttgcctctc attaatgtt tnaaagtggT gtggTgggcc aaatattga aatgatggaa 540
 ctgactgata aagctgtaca aalaagcagt gtgcctaaca agcaacacag taatgttgac 600
 atgcttaatt cacaaatgct aatttcatta taaatgtttg ctaaaataca ctttgaacta 660
 tttctctgtn tloccagagc tgagatntta gatTTtatgt agtatnaagt gaaaaantac 720
 gaaaalaafa acattgagga aaaaanaaaa aaaaaaaa a 761

<210> 189
 <211> 482
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{482}
 <223> n = A,T,C or G

<400> 189
 tttttttttt ttTgcrgatn ctactatTTT attgcaggan gtgggggtgt atgcacogca 60
 caccggggct atnagaagca agaagggaag agggagggga cagccccttg ctgagcaaca 120
 aagccgcctg ctgccttctc tgtctgtctc ctggTgcagg cacatgggga gaccttcccc 180
 aaggcagggg ccaccagtcc aggggtggga atacaggggg tgggngtgt gcataagaag 240
 tgataggcac aggccacccg gtacagaccc ctggctctct gacaggtnga ttctgaccag 300
 gtcattgtgc cctgccoagg cacagcgtan atctggaaa gacagaatgc ttctctttc 360
 aaatttggt ngTcatngaa ngggcanTT tccaantTng gctnggtctt ggtacnctt 420
 gttcgccca gctccnctc caaaaantat tcacccnct ccaaatTgt tgnnggnucc 480
 cc 482

<210> 190
 <211> 471
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> {1}...{471}
 <223> n = A,T,C or G

<400> 190
 tttttttttt ttttaaaaca gtttttcaca aaaaaattta ttagaagaat agtggttttg 60
 aaaactctcg catccagtga gaactaccat acaccacatt acagctngga atgtncTca 120
 aatgtctggt caaatgatac aatggaaaca ttcaatotta cacatgcaog aaagaacaag 180
 cgtttttgac atacaatgca caaaaaaaa aggggggggg gaccacatgg attaaaattt 240
 taagtactca tcacatacat taagacacag ttctagtuca gtcnaaaatc agaactgcnt 300

tgaaaaattt	catgtatgca	atcccaacca	agaacttnat	tggatgatcat	gantnotcta	360
ctacatcnac	cttgatcatt	gccagggaacn	asaagttina	ancacnncngt	acaaasanaa	420
tctgtaattn	anttcacccct	ccgtacngaa	aatntntnnt	tatacactcc	c	471

<210> 191
 <211> 402
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> {1}...{402}
 <223> n = A,T,C or G

<400> 191						
gagggattga	aggtctgttc	taatgtcggm	ctgttcagcc	accaactcta	acaagttgct	60
gtcttccact	cactgtctgt	aagcttttta	acccagacwg	tatcttcala	aataggaaca	120
attcttcacc	agtcacatct	tctaggacct	ttttggatto	agttagtata	agctcttcca	180
cttcctttgt	taagacttca	tctggtaaa	tcttaagttt	tqlagaaagg	aettyaattg	240
ctcgtttctc	aacaatgtcc	tctccttgaa	gtattttgct	gaaccaacca	cctaaagtcc	300
ctttgtgcac	ccattttaaa	tatacttaat	agggaattgk	lncaactaggt	taatttctgc	360
aagagtcatc	tgtctgcaaa	agttgcgtta	gtctctctgc	ca		402

<210> 192
 <211> 601
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> {1}...{601}
 <223> n = A,T,C or G

<400> 192						
gagctcggat	ccaataatct	ttgtctgagg	gcagccacaa	taincagtgc	catggnaact	60
ggtctacccc	acatgggagc	agcatgccgt	agntatataa	ggtcattccc	tgagtcagac	120
atgcyytttt	gaytaccgtg	tqccaaagtgc	kagtgaltct	yaacacacyt	ccatcccgyt	180
cttttcttga	aaaactggcc	cttktcttga	actagcarga	catcacttac	aaattcacc	240
acgagacact	tgaagggtgt	accaaagcga	ytcttgcatt	gctttttgtc	cctcgggcac	300
caqtttgtca	tactaaacccg	ctggttttgc	tccatcacat	ttgtgatctg	tagctcttga	360
tacatctctc	gacgttactg	aagaacttct	tctttttgtt	caaaagcacc	tofttggtgc	420
tgllggallc	ggttcccatt	tcccagtcyg	aatgttcaca	tggcatattt	waattccacc	480
aaaacattgc	gatttgaggc	tcagcaacag	caaatectgt	tccggcattg	gctgcaagag	540
ntctgatgta	gccggccragc	gccaaaggcag	gcgccttgag	ccccaccagt	agcagaaagca	600
g						601

<210> 193
 <211> 608
 <212> DNA
 <213> Homo sapien

 <220>
 <221> misc_feature
 <222> {1}...{608}
 <223> n = A,T,C or G

<400> 193						
atacagccca	natuccacca	cgaagatgcg	cttgttgact	gagaacctga	tgcggtcact	60
ggtcccgctg	tagtcccagc	gactctccac	ctgctggaag	cggttgatgc	tgcactcytt	120
cccaactgac	gcagmagcgg	gscgggtcaa	tgaactccay	tctgtgcttg	gggtkgaagg	180
tkaagtgcag	gaagaggctg	accacctcgc	ggtccaccag	gatgcccgac	tgtgcgggac	240
ctgcagcgaa	actcctcgat	ggtcatgagc	gggaagcgaa	tgaggcccg	ggccttgccc	300

```

agaacotttc gcoctgttctc tggcgteacc tgcagctgct gccgctgaca ctgggcctcg      360
gaccagcgga caaacggcrt tgaccagccg caoctcaagg atgccagctg tgcagcgctc      420
caggammgac accagcgtgt ccaggtcaat gtgggtgaaq cccctccgag gtatgagcgt      480
ctgcagtgtt tttgtcgatg ttctccagge acaggetggc cagctgaggc tcatcgaaga      540
gtcgcgccctg cgtgagcagc atgaaggcgt tglcggcctg cagtlcttct tcagggaactc      600
cacgcaat                                         608

```

```

<210> 194
<211> 392
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(392)
<223> n = A,T,C or G

```

```

<400> 194
gaacggctgg acccttgccc gcatttgtct tgcctggcagg gaataccttg gcaagcagyt      60
ccagctccgag cagcccccaga ccgctgcgcg ccgaagctaa gcctgcctct ggccctcccc      120
tccgctccaa tgcagaaacca gtagtgggag cactgtgttt agagttaaga gtgaacactg      180
tttgatttta ctggggaatt tcctctgtta tatagctttt cccaatgcta atttccaaac      240
aacaacaaca aaataacatg tttgcctgtt aagttgtata aaagttagtg attctgtatt      300
taaagaaaat attactgtta catatactgc ttgcaatttc tgtattttatt gktnctstgg      360
aaataaatat agttattcaa ggttgtcant cc                                         392

```

```

<210> 195
<211> 502
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(502)
<223> n = A,T,C or G

```

```

<400> 195
ccattkgagg ggtkaggkyc cagttycoga gtggaagaaa caggucaggc gaaqtgcctg      60
ccagctcgag gcagatgttc ccacagtga cccagagccc slggggtata gtytctgccc      120
ccctncaagg aaagaccacs ttctggggac atgggctgga ggcagggccc lagaggcacc      180
aagggaaggc cccattccgg gggtgttccc cggggaggga ggggaggggc tctgtgtgcc      240
ccccagaggg aagaggccct gagtccctgg atcagacacc ccttcacgtg tatccccaca      300
caaatgcaag ctacccaagg tccccctcct gtccccttcc atcacccctg amcgggccact      360
gacscacacc cauccagagc acgcccaccc ccctggggar tgtgtctcaag gartcgcnng      420
gcacgctgga cctctngtcc cagaaagggg cagaatctcc aatagangga ctgarcmatt      480
gctnnaaaaa aaaaaaasaa aa                                         502

```

```

<210> 196
<211> 665
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(665)
<223> n = A,T,C or G

```

```

<400> 196
ggttactttg tttcattgcc accacttagt ggtgttcaLL tagaaccatt Ltgctctgctc      60
cctctggaag ccttgogcag agcggacttt gtaattgttg gagaataact gctgaatttt      120
wagctgtttk gagttgatts gcaccactgc acccacaact tcaatatgaa aacyawtttg      180
actwatttat tatcttgtga aaytatasc aatgaaaatt ttgttcatac tgtattkac      240

```

```

aagtatgatg aaaagcaawa gatatatatt cttttattat gttaaattat gattggcatt 300
attaatcggo aaaatgtgga gtgtatgttc ttttcacagt aatatatgco ttttgtaact 360
tcacttgggtt attttattgt aaatgaritc caaatctctt aatttaagar aatgggtatgt 420
watatttatt tcattaattt ctttcotkgt ttacgtwaat ttgaaaaga wtgcattgatt 480
tcttgacaga aatcgatctt gatgctgtgg aagtagtttg acccacatcc ctatgagttt 540
ttcttagaag gtataaaggc tgtagcccat cnaacttcaa agaaaaaat gaccacatac 600
tttgcattca ggctgaatg tggcatgctn ttctaattcc aactttataa actagcaaan 665
aagtg

```

```

<210> 197
<211> 492
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(492)
<223> n = A,T,C or G

```

```

<400> 197
ttttnttllt ttttttttgc aggaaggatt ccatttattg tggatgcatt ttcacaatat 60
atgtttattg gagcgatcca ttatcagtga aaagtatcaa gtgtttataa natttttagg 120
aaggcagatt cacagaaatc gctngtcngc ttgcagtttt acctcgtana gatnacagag 180
aattatagtc naaccagtaa acnagggaatt tacttttcaa aagattaaat ccaaactgaa 240
caaaattcta ccctgaaact tactccatcc aaatatgtga ataanagtca gcagtgatcc 300
attctcttct gaactttaga ttttctagaa aaatatgtaa tagtgatcag gaagagctct 360
tgttcaaaag tacaacnaag caatgttccc ttaccatagg ccttaattca aactttgatc 420
catttcactc ccattcacggg agtcaatgct acctgggaca cttgtatttt gttcatnctg 480
ancntggctt aa 492

```

```

<210> 198
<211> 478
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(478)
<223> n = A,T,C or G

```

```

<400> 198
ttntttttgn atttcantct gtannaanta ttttcattat gtttattana aaatatatnaa 60
tgtntccacn acaaatcatn ttacntnagt aagagggcan ctacattgta caacatacac 120
tgagtatatt ttgaaaagga caagttttaa gtanacncat attgcccanc atancavatt 180
tatacatggc ttguttgata ttttagacacg canaaactga gtgagttacc aquaanaaal 240
natatatgtc autongattt aagatacaaa acagatccctc lqgtacatan catentglea 300
gagttgtggc lltatgttta ctgaaagtca atgcagttcc tgtacaaaga galggccgta 360
agcattctag tacctctact ccattggttaa gaatcgtaca cttatgttta catatgttca 420
gggttaagaat tgtglaaagt nsanttatgg agaggtccan gagaaaaalt tgatncas 478

```

```

<210> 199
<211> 482
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(482)
<223> n = A,T,C or G

```

```

<400> 199
agtgaacttg cctccaaaca aacccttga tcaagtttgt ggcactgaca atcagacctt 60

```

tgcctagttcc	tgtcatctat	tcgtactactaa	atgcagactg	gaggggacaa	aaaaggggca	120
tcaactccag	ctggattatt	ttggagcctg	caaactctatt	cttacttgta	cggactttga	180
agtgaattcag	tttctctctac	ggatgagaga	ctgggtcgaag	aatatcct,ca	tgcagcttta	240
tgaagccnac	tctgaacacg	ctgggttatct	nagatgagaa	ncagagaaat	aaagtcnaga	300
aaatttacct	ggangaaaag	aggottingg	ctggggacaa	tccattgaa	ccttctctta	360
anggacttta	agaanaaaact	accacatgtn	tgtngtatcc	tgggtgccngg	cggtttantg	420
ascntngacn	ncacccttnt	ggaatanant	cttgacngcn	tcttgaactt	gctcctctgc	480
ga						482

<210> 200

<211> 270

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (270)

<223> n = A, T, C or G

<400> 200

cggccgcag	tgcactcca	gctggggccg	tgcggacgaa	gattctgcca	gcagttggtc	60
cgaactggac	gcggcgccg	gcgacagtcg	cagggtgcaac	gcggcgccct	gggtctttgc	120
aaqgctgagc	tgaacgcgca	gaggctcggt	caegtcacac	gacettgacg	cggctgggga	180
cagccgggac	gaagcccggt	gaagcgccga	ggactcgggg	agccctcggg	gaagggcgcc	240
ccgagagata	cgccgggtgc	ggtggccgcc				270

<210> 201

<211> 419

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (419)

<223> n = A, T, C or G

<400> 201

tttttttttt	ttttgggaac	tactgcgagc	acagcaggc	agcaacaaat	ttatttttgc	60
gctagcaagg	taacagggtg	gggcattggt	acatgttcag	gtcaacttcc	tttgctcgag	120
ttgatttggt	tgtctttatg	ggggcggggt	ggggtagggg	aaancgaagc	anaant,acac	180
tggagtggtt	gcacccctcc	tgtagaacct	ggttacnaas	gcttggggca	gttcacctgg	240
tctgtgaacg	tcatttttct	gacatcaatg	ttattagaag	tcaggatata	ttttagagag	300
tccactgtnt	ctggaggggg	attagggttt	cttgccaana	tccaancaaa	atccacntga	360
aaaagttgga	tgatncangt	acngaatacc	ganggcatan	ttctcatant	cggtaggcca	419

<210> 202

<211> 509

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}... (509)

<223> n = A, T, C or G

<400> 202

tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	tttttttttt	60
tggcacttaa	tccattttta	tttcaaaatg	tctacaaant	tttaaatnnc	cattatacng	120
gttatttttc	aaaatctaaa	nnattattcaa	atntnagcra	aantccttcc	ncaaatnnaa	180
tacnncnaaa	aatcaaaaat	atacntntct	ttcagcaaac	ttngttacat	aaattaaaaa	240
aatatatacg	gctgggtggt	tcaaagtaca	attatcttaa	cactgcaaac	atnttttnaa	300
ggaaactaaa	taaaaaaaa	cactnccgca	aagggttaag	ggaacaacaa	attcntttta	360

caacancnnc	nattataaaa	atcatatctc	aaatcttagg	ggatataata	cttcacacng	420
ggatcttaac	ttttactnca	ctttgtttat	ttttttanaa	ccattgtntt	gggcccacaa	480
caatggnaet	ncnccnnc	tggaactagt				509

<210> 203
 <211> 583
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (583)
 <223> n = A, T, C or G

<400> 203						
tttLtttttt	ttttttttga	ccccctctt	ataaaaaaca	agttaccatt	ttattttact	60
tacacatatt	tattttataa	ttggtattag	atattcaaaa	ggcagctttt	aaaatcaaac	120
taaatggaaa	ctgcottaga	tacataatto	ttagggaatta	gcttaaaatc	tgootaaagt	180
gaaaatcttc	tctagctctt	ttgactgtaa	atctttgact	cttgtaaaac	atccaaatto	240
atttttcttg	tctttaaaat	tatctaactt	ttccattttt	ccctatttcc	aagtcaattt	300
gcttctctag	cctcatttcc	tagctcttat	ctactattag	taagtggctt	ttttcctaaa	360
agggaaaaca	ggaagagana	atggcacaca	aaacaaacat	tttatattca	tattttctac	420
taagttaata	aaatagcatt	ttgtgaagcc	agtcacaaag	aaggcttaga	tccttttatg	480
tcatttttag	tcactaaacg	atatonaaag	tgccagaatg	caaaaggttt	gtgaaccltt	540
attcaaaagc	taataaaga	tatttcacat	actcalcltt	ctg		583

<210> 204
 <211> 589
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (589)
 <223> n = A, T, C or G

<400> 204						
ttttttttnt	tttttttttt	tttttttctc	ttcttttttt	ttganaatga	ggatcgagtt	60
tttcaactctc	tagatagggc	atgaagaaaa	clcatclttc	cagcttctaa	akaacaaatca	120
aatctcttat	gcttatctct	atlttaagll	aaactaatga	gtcactggct	tatcttctcc	180
tgaaggaaat	ctgttcaatc	ttctcattca	tatgttata	tcaagtacta	ccttgcatat	240
tgaaggllll	tlcttctcta	tttacacata	tatttccatg	tgaatttgta	tcaaaccttt	300
atlttcaatgc	aaactagaac	ataatgtntt	cttttgcata	agagaagaga	acaatatnag	360
catttcaaaa	ctgttcacat	tgtttggtta	gnttatccat	tataattagt	tnggcaggag	420
ctaatacaaa	tcacattttac	ngacnagcaa	taataaaact	gaagtaccag	ttaaatatcc	480
aaaataatta	aaggaaacatt	tttagcctgg	gtataattag	ctaattcact	ttacaagcat	540
ttattnagaa	tgaattcaca	tgttattatt	contagccca	acacaatgg		589

<210> 205
 <211> 545
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> (1) ... (545)
 <223> n = A, T, C or G

<400> 205						
tttttttttt	tttttttcaat	ataaatcaaa	aaataattta	tttttataat	caaaatllcat	60
agaaaagtgc	cttacatttc	ataaaagtgt	glttctcaaa	gtgatcagag	gaattageta	120
tngtcttcaa	ccccaatatt	aatttgagga	aaatacacca	aastacatta	agtaaatatt	180

ttaagatcat	agagcttgta	agtgaaga	taaaatttga	cctcagaaac	tctgagcatt	240
aaaaatccac	tattagcaaa	taaattacta	tggacttctt	gctttaaatt	tgtgatgaat	300
atgggggtgc	actggtaaa	caacacattc	tgaagggtac	attacttagt	gatagattct	360
tatgtacttt	gctanatac	gtggatata	gttgacaaat	ttctctttct	tcaatctttt	420
aaggggcnga	ngaaatgagg	aagaaaaaga	aaggattacg	catactgttc	tttctatnng	480
aaggattaga	tatgtttctt	ttgccaatct	taaaaaaala	ataatgttta	ctactagtga	540
aaccc						545

<210> 206

<211> 487

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(487)

<223> n = A,T,C or G

<400> 206

tttttttttt	tttttagtc	aagtttctna	tttttattat	aattaaagtc	ttggtcattt	60
catttattag	ctctgcaact	tacatatctt	aattaaagaa	acgttnttag	acaaactgna	120
caattttata	atgtaagggt	ccattattga	gtanatatat	tcctccaaga	gtggatgtgt	180
cccttctccc	accaactaat	gaancagcaa	catttagttta	attttattag	tagalnatac	240
actgctgcaa	acgttaattc	tcttctccat	ccccatgtug	atattglgta	latgtgtgag	300
ttggtnagaa	tgcatacanca	atctnacaat	caacagcaag	atqaagctag	gcntgggctt	360
tcgggtgaaa	tagactgtgt	ctgtctgaat	caaatgatct	gacctatcct	cgggtggcaag	420
aactcttcga	accgcttctt	caaggcngc	tgcacacttt	gtggcctctn	ttgcacttgt	480
ttcaaaa						487

<210> 207

<211> 332

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(332)

<223> n = A,T,C or G

<400> 207

tgaattggct	aaaagactgc	atttttanaa	ctagcaactc	ttatttcttt	cctttaaaaa	60
tacataguat	taaaatccaa	atcctcttta	aagacctgac	agcttgagaa	ggctactact	120
gcatttatag	gacctctctg	tggttctgct	gttacntttg	aantctgaca	atccttgana	180
atcttlgcct	gcagaggagg	taaaagggtat	tggattttca	caagaggaana	acacagcgca	240
gaaatgaagg	ggccaggctt	actgagcttg	tccactggag	ggctcatggg	tgggacatgg	300
aaaagaaggc	agcctaggcc	ctggggagcc	ca			332

<210> 208

<211> 524

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(524)

<223> n = A,T,C or G

<400> 208

agggcgtggt	guggagggcg	ttactqltll	gtctnagtaa	caataaatac	aaaagactg	60
gttgtgttcc	qccccctcc	aaccacgaag	ttgatttctc	ttgtgtgcag	agtgaactgat	120
tttaaaaggac	atggaggttg	tcacaatgtc	acaatgtcac	agtgtgaagg	gcacaactcac	180
tccgcqlqqa	lccacaatta	gcaaccacaa	atagctcatg	agtcacatact	tgtaaatact	240

tttggcagaa	tacttnttga	aacttgcaga	tgataactaa	gatccaagat	atttcccaaa	300
gtaaatagaa	gtgggtcata	atattaatta	ccgtgttcac	tcagcttcca	tttacaagtc	360
atgagcccag	acactgacat	caaaactaagc	ccacttagac	tcctcaccac	cagtctgtcc	420
tgtcatcaga	caggaggctg	tcaccttgac	caaattctca	ccagtcnate	atctatccaa	480
aaaccattac	ctgatccact	tccggtaatg	caccaccttg	giga		524

<210> 209
 <211> 159
 <212> DNA
 <213> Homo sapien

<400> 209						
gggtgaggaa	atccagagtt	gccatggaga	aaattccagt	gtcagcattc	ttgtctcttg	60
tggcctctc	ctacactctg	gccagagata	ccacagtcaa	acctggagcc	aaaaaggaca	120
caasggactc	tcgacccaaa	ctgccccaga	ccctctcca			159

<210> 210
 <211> 256
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(256)
 <223> n = A,T,C or G

<400> 210						
actccctggc	agacaaaagg	agagggagag	gctctgttag	lletgtgttg	ttgaactgcc	60
actgaatlcc	tttccacttg	gactattaca	tgccanttga	gggactaatg	gaanaacgta	120
tggggagall	ttanccaatl	langtntgta	aatggggaga	ctggggcagg	cgggagagel	180
ttgcagggtg	naaatgggan	ggctggtttg	ttanatgaac	agggacatag	gaggtaggca	240
ccaggatgct	aatca					256

<210> 211
 <211> 264
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(264)
 <223> n = A,T,C or G

<400> 211						
acattgtttt	tttgagataa	agcattgaga	gagctctcct	taacgtgaca	caatggaggg	60
actggaacac	ataccacat	ctttgttctg	agggataatt	ttctgataaa	gtcttgtctg	120
atattcaagg	acatatgtta	tatattattc	agttccatgt	ttatagccta	gttaaggaga	180
ggggagatac	attcngaaag	aggactgaaa	gaaatactca	agtnggaaaa	cagaaaaaga	240
aaaaaaggag	caaatgagaa	gcct				264

<210> 212
 <211> 328
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(328)
 <223> n = A,T,C or G

<400> 212						
acccaaaaat	ccaatgctga	atatttggct	tcattattcc	caaatctttt	galtqlcaaa	60

ggatttaattg	tgtgtctcagc	ttgggcactt	cagttaggac	ctaaggatgc	cagccggcag	120
gittatatat	gcagcaacaa	tattcaagcg	cgacaacagg	ttattgaact	tgcccgccag	180
tttaatttca	ttcccatiga	cttgggatcc	ttatcatcag	ccagagagat	tgaaaattta	240
ccoctacnac	tctttactct	ctgganaggg	ccagtgggtg	tagctataag	cttggccaca	300
tttttttttc	ctttattcct	ttgtccaga				328

<210> 213

<211> 250

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(250)

<223> n = A,T,C or G

<400> 213

acttatgagc	agagcgacat	atccnagtgt	agactgbata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttctctcat	tccaagagtt	180
ttcaatatatt	gcatgaacct	gctgataanc	catgttaana	aacaaatata	tctctnacct	240
tctcatcggt						250

<210> 214

<211> 444

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(444)

<223> n = A,T,C or G

<400> 214

accagaatc	caatgctgaa	tatttggett	cattattccc	agattctttg	attgtcaaag	60
gatttaattg	tgtctcagct	tgggcacttc	agttaggacc	taaggatgcc	agccggcagg	120
tttatatatg	cagcaacaat	attcaagcgc	gacaacagg	tattgaactt	gcccggccagt	180
tgaatttcat	tcccatigac	ttgggatcct	tatcatcagc	canagagatt	gaaaattttac	240
ccctaagact	ctttactctc	tggagagggc	cagtgggtgt	agctataagc	ttggccacat	300
ttttttttcc	ttttattcct	tgtagagat	gcgattcata	catatgctan	aaaccaacag	360
agtgaacttt	acaaaattcc	tataganatt	gtgaataaaa	cottacctat	agttgccatt	420
actttgtctc	ccctaataata	cctc				444

<210> 215

<211> 366

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(366)

<223> n = A,T,C or G

<400> 215

acttatgagc	agagcgacat	atccaagtgt	anactgaata	aaactgaatt	ctctccagtt	60
taaagcattg	ctcactgaag	ggatagaagt	gactgccagg	agggaaagta	agccaaggct	120
cattatgcca	aagganatat	acatttcaat	tctccaaact	tcttctctcat	tccaagagtt	180
ttcaatatatt	gcatgaacct	gctgataagc	catgttgaga	aacaaatata	tctctgacct	240
tctcatcggt	aagcagaggg	tgtaggcaac	atggaccata	gogaenaaaa	aacttagtaa	300
tccaagctgt	tttctacact	gtaaccagg	ttccaaccaa	ggtggaaate	tctataactt	360
ggtgcc						366

<210> 216
 <211> 260
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)..(260)
 <223> n = A,T,C or G

<400> 216
 ctgtataaac agaactccau tgcangaggg agggccgggc caggagaetc tccgcttctc 60
 caagacaggg gactaaggag ggtctccaca ctgclnntaa gggctnttnc atttctttat 120
 taataaaaag tnnaaaaggc ctcttclcaa ctttttctcc ttnggckggg aaatctaaaa 180
 atcaaaaatt tectnaagtl ntcaagctat catactatac ntatcctgas aaagcaacat 240
 aattcttctc tccctctttt 260

<210> 217
 <211> 262
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)..(262)
 <223> n = A,T,C or G

<400> 217
 acctacgtgg gtaagtttan aaatgttata atttcaggaa naggacgca tataattgta 60
 tcttgcctct aattttctct ttttaataagg aatttcgcaa ttggggtggg gggaaagkag 120
 ggcattctac agtttgagca aaatgcaatt aaatgtggaa ggacagcact gaasaatttt 180
 atgaataatc tglatgattc tatgctctca gagtagattt ataattagcc acttacccta 240
 atatctttca tgcttgtaaa gt 262

<210> 218
 <211> 205
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)..(205)
 <223> n = A,T,C or G

<400> 218
 acaaggtgg tgcattaccg gaantggatc aaggacacca tcttggtcca cccctgagca 60
 cccclatcaa ctcccctttg taglaaactt ggaaccllqg aaatgaccag gccaaagactc 120
 aggcctccc agttctactg acctttgtcc ttangtntna nglccagggt tgctaggaaa 180
 anaatcagc agacacaggt gtaaa 205

<210> 219
 <211> 114
 <212> DNA
 <213> Homo sapien

<400> 219
 tactgttttg tctcagtaac aataaatata aaaagactgg ttgtgttccg gcccatcca 60
 accacgaagt tgatttctct tgtgtgcaga gtgactgatt ttaaaggaca tggg 114

<210> 220
 <211> 93
 <212> DNA

<213> Homo sapien

<400> 220

actagccagc acnaaaggca gggtagcctg aattgcttgc tgcctttac atttcllta 60
aaataagcat ttagtgcctc gtcctactg agt 93

<210> 221

<211> 167

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(167)

<223> n = A,T,C or G

<400> 221

actanqtgca ggtgcgcaca aatatttgc gatattccct tcatcttga ttccatgagg 60
tcttttgccc agcctgtggc tctactgtag taagtttctg ctgatgagga gccagnatgc 120
ccccactac cttccctgac gctccccaana aatcaacca cctctgt 167

<210> 222

<211> 351

<212> DNA

<213> Homo sapien

<400> 222

aggcggtggt gcgaggggcg gtactgacct cattagtaag aggatgcatt ctggcaccoc 60
gttcttcacc tgtcccccna tccftaaaaq gccatactgc ataaaglcac caacagataa 120
atgtttgctg nattaagga tggatgaaaa aaattcaaa tgaalltttg cataatccaa 180
ttttctcttt tatatttcta gaagaagttt ctttgagcct attagatccc gggaatcttt 240
taggtgagca tgattagaga gcttgtaggt tgtttttaca tatatctggc atatttgagt 300
ctcgtatcaa aacaatagat tggtaaaaggt ggtattattg tattgataag t 351

<210> 223

<211> 383

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(383)

<223> n = A,T,C or G

<400> 223

aaaacaaacc aacaaaaaaa acaattcttc attcagaana attatcttag ggactgatat 60
tggtaallat ggtcaattta atwrtxttkt ggggcatttc cttaacattgt ctggcaaga 120
ttaaatgtc tgtgccaaaa ttttgtattt tatttgagga ctcttatca aaagtaatgc 180
lgccaaagga agtctaagga attagtagtg ttccmctcac ttgtttggag tgtgctatc 240
taaaagattt tgatttccctg gaatgacaat tatattttaa ctttggtggg ggaanagtt 300
ataggaccac agtcttccct totgatactt gtaaatatatt cttttattgc acttgctttg 360
accattaagc tatatgttta aaa 383

<210> 224

<211> 320

<212> DNA

<213> Homo sapi n

<400> 224

ccctgaagg cttcttggtt gaaaatagta cagttacaac caatayggac aacaaaaaga 60
aaaagtttgt gacattgtag tagggagtgat gtacccctta cccccatca aaaaaaat 120
ggatacatgg ttaaaggata raagggcatt atlltatcat atgltctaaa agggaaayga 180

gagaaatatac	tactttctcr	aatggaagc	oottaaaaggt	gctttgatac	tgaaggacac	240
aaatgtggcc	gtccctctc	ctttaraagt	gcctgacttg	gacacggtaa	ctgttgcaqt	300
tttaractcm	gcattgtgac					320

<210> 225
 <211> 1214
 <212> DNA
 <213> Homo sapien

<400> 225						
gaggactgca	gcocgcactc	gcagccctgg	caggcggcac	tggatcatgga	aaacgaattg	60
ttctgctcgg	gcgtcctggg	gcatacgcag	tgggtgctgt	cagccgcaca	ctgtttccag	120
aaetnctaca	ccatcgggct	gggectgcac	agtccttgagg	ccgaccaaga	gccagggagc	180
cagctgggtg	agccagccct	ctccgtacgg	cacccagagt	acaacagacc	cttgctcgct	240
aacgacctca	tgtctatcaa	gttggacgaa	tccgtgtccg	agtctgacac	catccggagc	300
atcagcattg	cttcgcagtg	ccctaccggg	gggaactctt	gcctcgtttc	tggctggggg	360
ctgctggcga	acggcagaa	gcctaccgtg	ctgcagtgcg	tgaacgtgtc	ggctgggtgt	420
gaggaggtct	gcagtaagct	ctatgacccg	ctgtaccacc	ccagcatgtt	ctgcgcgggc	480
ggagggcaag	accagaagga	ctcctgcaac	gggtgactctg	gggggcccc	gatctgcaac	540
gggtacttgc	agggccttgt	gtctttcgga	aaagccccgt	gtggccaagt	tggcgtgcca	600
gggtgtctaca	ccaacctctg	caaatctact	gagtggatag	agaaaacctg	ccaggccagt	660
taactctggg	gactgggaac	ccatgaaatt	gacccccaaa	tacatcctgc	ggaagggaatt	720
cagggaatafc	tgttccacgc	ccctcctccc	tcaggccccag	gagtcacagg	ccccagcccc	780
tcctccctca	aaaccaagggt	acagatcccc	agccccctct	ccctcagacc	caggagtcca	840
gacccccag	ccctcctccc	ctcagaccca	ggagtccagg	ccctcctccc	tcagacccag	900
gagtcacagc	cccccagccc	ctcctccctc	agacccccgg	gtccaggccc	ccacccctcc	960
ctccctcaga	ctcagaggtc	caagcucccc	acccccctct	cccccagccc	agagggtccg	1020
gtcccaagcc	ctcctccctc	agacccagcg	gtccaatgcc	acccagactc	tcctctgacc	1080
cagtgcccc	ttgtgggacg	ilgacccaac	cttaccaggt	ggtttttcat	tttttctccc	1140
tttccctcag	alccagaaat	aaagtctaa	agagcgccaa	aaaaaaabaa	aaaaaaaaaa	1200
aaaaaaaaaa	aaaa					1214

<210> 226
 <211> 119
 <212> DNA
 <213> Homo sapien

<400> 226						
acuuagfatg	tgcagggaga	cgggaacccc	tgtgacagcc	cactccacca	gggttcccaa	60
agaacclqgc	ccagtcataa	tcaattcctc	tgaacgtggc	aatcaatcag	ataaccagt	119

<210> 227
 <211> 818
 <212> DNA
 <213> Homo sapien

<400> 227						
acaattcata	gggacgacca	atgaggacag	ggaatgaacc	cggtctctcc	ccagccctga	60
tttttgetac	atatgggggc	ctttttcatt	ctttgcaaaa	acactgggtt	ttctgagaa	120
acggacgggt	cttagcaca	tttgtgaat	ctgtgtaraa	ccgggctttg	cagggggagt	180
aattttccct	ctctggagga	aaggtgggtg	ttgacaggca	gggagacagt	gacaaggcta	240
gagaaagcca	cgtctggcct	tctctgaacc	aggatgggac	ggcagacccc	tgaaaaccga	300
gcttgtcccc	ttccaatcag	ccactttcta	gaacccccat	ctaacttctt	actggaaaag	360
agggcctcct	caggagcagt	ccaagagttt	tcaaagataa	cgtgacaaat	accatctaga	420
ggaaagggtg	caacctcagc	agagagggcg	agagcttaac	tctggctcgt	tcagagagca	480
acctgctggc	tgtcttggga	tgcgcccagc	ctttgagagg	ccactacccc	atgaacttct	540
gccatccact	ggauatgaag	ctgagggccc	tgggcttcaa	caetgaqltg	tcattgaggg	600
gacaggtctc	gcctcagc	gggclgagg	cagcaaccac	tcctctcccc	ltctctacgc	660
aaagcuattc	ccacaaatcc	agacnatacc	atgagggccc	ggagccccaa	cagtllygct	720
caagaggaal	tgaggactgt	ctcagcctgg	ctttgggctg	acacccatgc	cacacavaag	780
gtccacttct	agggtttcag	cctagatggg	agtcgtgt			818

<210> 228
 <211> 744
 <212> DNA
 <213> Homo sapien

<400> 228
 actggagaca ctgttgaact tgatcaagac ccagaccacc ccaggtctcc ttctgtggat 60
 gtcatgaagt ttgacatacc ttggaacga gccctcctct tggagatgg aagaccgtgt 120
 tcgtggcoga cctggcctct cctggcctgt ttcttaagat gggagtcac atttcaatgg 180
 taggaasagt ggcttcgtaa aatagaagag cagtcactgt ggaactacca aatggcgaga 240
 tgcctgggtc acattggggg gctttgggat aaaagattta tgagccaact attctctggc 300
 accagattct aggcacagtt gtccactga agcttttccc acagcagtc accctctgcag 360
 gctggcagct gaatggcttg ccggtggctc tgtggcaaga tccautgag atcgatgagt 420
 gagaaggcta ggatgcttgt ctagtgttct tagctgtcac gttggctcct tccaggttgg 480
 ccagacgggtg ttggccaact ccttctaaaa cacaggcgcc ctctctgtga cagtgaaccg 540
 ccgtggatg ccttggccca ttccaycagt cccagttatg ctttccaggt ttggggcttg 600
 ttctttctgt taatgttctt ctgtgllgtc agctgtcttc alttcctggg ctacgcagca 660
 ttgggagatg tggccagag atccactct taagacccag tggcgaaaga cactttcttt 720
 ctccactctg aagtagctgg tggc 744

<210> 229
 <211> 300
 <212> DNA
 <213> Homo sapien

<400> 229
 cgagtctggg ttttgtctat aaagtttgat cctcctttt ctcatccaaa tcctgtgaac 60
 cattacacat cgaataaaaa gaaaggtggc agacttggcc aacgccagc tgacatgtgc 120
 tgcagggttg ttgttttta attattattg ttagaaacgt caccacagc cctgttaat 180
 ttgtatgtga cagccaactc tgagaaggct ctatttttcc acctgcagc gatccagtct 240
 cactaggctc ctcttggccc tccacttggc gtctccagcc gtgtgggtgc ccactgacat 300

<210> 230
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 230
 cagcagaaca aatacaata tgaagagtgc aaagatctca taaaatctat gctgaggaat 60
 gagcgacagt tcaaggagga gaagcttgca gagcagctca agcaagctga ggagctcagg 120
 caatataaag tcctgggtca cactcaggaa cgagagctga ccaggttaag ggagaagttg 180
 cgggaaggga gagatgcctc cctctcattg aatgagcacc tccaggccct cctcactccg 240
 gatgaaccgg acaagtccca ggggcaggac ctccaagaaa cagacctcgg ccgcgaccac 300
 g 301

<210> 231
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 231
 qcaagcaccg tggcaaatct clgtcaggtc agctccagag aagccattag tcatttttagc 60
 caggaaatcc aagtcacacat ccttggcaac tggggacttg cgcagggttag ccttgaggat 120
 qgcacacagg gacttctcat caggaaagtg gatgtagatg agctgatcaa gacggccagg 180
 tctgaggatg ccaggatcaa tgatgtcagg ccggttggta ccgccaatga tgaacacatt 240
 Lttttttgtg gacatgccat ccattttctgt caggatctgg ttgatgactc ggtcagcagc 300
 c 301

<210> 232
 <211> 301
 <212> DNA
 <213> Homo sapien

75

<400> 232
 agtaggtatt tcgtgagaag ttcaacacca aaactggaac atagtctctc ttcaagtgtt 60
 ggcgacagcg gggcttcctg attctggaat ataactttgt gttaaattaac agccacctat 120
 agaagagtcg atctgctgtg aaggagagac agagaactct gggttccgtc gtccgtgtcca 180
 cgtgctgtac caagtgtctg tgccagcctg ttacctgttc tcaactgaaa tctggctaatt 240
 gctcttgtgt atcaattctg attctgacaa tcaatcaatc aatggcctag agcaactgact 300
 g 301

<210> 233
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 233
 atgactgact tccnagtaag gctctctaaag gggtaaqtaq gaggatccac aggalttgag 60
 atgctaaaggc cccagagatc gtttgctcca accctcttat ttccagaggg gaaaatgggg 120
 cctagaagtt ccagagcacc tagctgggtg gctggcacc cctggcctcac acagactccc 180
 gagtgtctgg gactacaggc acacagtcac tgaagcaggc cctgttagca attctatgag 240
 tacaatttaa catgagatga gtagagactt tattgagaaa gcaagagaaa atcctatcaa 300
 c 301

<210> 234
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 234
 aggtcctaca catcgagact catccatgat tgatatgaat ttaaaaatta caagcaanga 60
 catcttcttc atcagatgc ttctctctct ttctctctct cgtctctctc tttctctctc 120
 tctctctctc caacatactt ctcaalctct ccaggcttta aaatcttgag ggattgatct 180
 cgcctcatga cagcaagttc aatgtttttg ccacctgact gaaccacttc caggagtgc 240
 ttgatccca gcttaatggt cagatcatct gcttcaatgg ctctgtcagt atagttcttc 300
 t 301

<210> 235
 <211> 283
 <212> DNA
 <213> Homo sapien

<400> 235
 tggggctgtg catcaggcgg gtttgagaaa tattcaattc tcagcagaag ccagaatttt 60
 aattccctca tcttttaggg aatcattttac cagggtttgg gaggattcag acagctcagg 120
 tgctttcact aatgtctctg aacttctgtc cctctttgtt catggatagt ccaataaata 180
 atgttatctt tgaaclgatg ctcataggag aqaatataag aaclctgagt gatataaca 240
 ttagggattc aaagaatat cagalttaaq ctcaactgg tca 283

<210> 236
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 236
 aggtcctcca ccaactgctt gaagcacggg taaaattggg aagaagtata gtgcagcata 60
 aatactttta aatcgatcag atttccctaa cccacatgca atcttcttca ccagaagagg 120
 tggagcagc atcatlaata ccaagcagaa tgcgtaatag ataaatacaa tgggtatata 180
 tgggttagag gcttcatgag tacagtgtac tgtggtatcg taatctggac ttgggttgta 240
 aagcatcgtg taccagtcag aaagcatcaa tactcgacat gaacgaatat aaagaacacc 300
 a 301

<210> 237
 <211> 301

76

<212> DNA

<213> Homo sapien

<400> 237

cagtggtagt	ggtgggtggac	gtggcggttg	tgttgggtgcc	tttttttggtg	cccgtcacaa	60
actcaatttt	tgttcgctcc	tttttggcct	tttccaattt	gtccatctca	attttctggg	120
ccttggctaa	tgccctcatag	taggagtcct	cagaccagcc	atggggatca	aacatctect	180
ttgggtagtt	ggtgccnagc	tgtcaatgg	cacagaatgg	atcagcttct	cgtaaatcta	240
gggttcggaa	attctttctt	cctttggata	algiagttca	tatccattcc	ctcctttatc	300
t						301

<210> 238

<211> 301

<212> DNA

<213> Homo sapien

<400> 238

gggcaggctt	tttttttttt	ttttttgatg	gtgcagaccc	ttgctttatt	tgtctgactt	60
gttcacagtt	cagccrcttg	ctcagaaaac	caacggggca	gctaaggaga	ggaggaggca	120
ccttgagact	tccggagtcg	aggtctctca	gggttcccc	gcccataaat	cattttctgc	180
acccctctgc	tgggaagcag	ctccctgggg	ggtaggaatg	ggtgactaga	agggatttca	240
gtgtgggacc	cagggtctgt	tcttcacagt	aggaggtgga	agggatgact	aatttcttta	300
t						301

<210> 239

<211> 239

<212> DNA

<213> Homo sapien

<400> 239

Alaagcagct	agggaattct	ttatttagta	atgtcctaac	ataaaagtgc	acstaactgc	60
ttctgtcaca	ccatgatctt	gagctttgtg	acaaccacga	aataactaag	agaaggcaaa	120
cataatacct	tagagatcaa	gaacatttta	cacagttcaa	ctgttttaaa	atagctcaac	180
attcagccag	tgaagtagag	gtgaatgcca	gcatacacag	tatacaggtc	cttcaggga	239

<210> 240

<211> 300

<212> DNA

<213> Homo sapien

<400> 240

ggtcctaatt	agcagcagc	ttccacattt	taacgcaggt	ttacgggtgt	actgtccttt	60
gggatctgcc	ctccagtgg	accttttaag	gangaagtgg	gcccagagta	agttccacat	120
gctgggtgag	ccagatgaat	tctgttccct	gglcacttct	ttcattgggg	cgaalggggg	180
ctgccaggtt	tttaaatcca	tgcttcaatc	tgaagcaca	ggtcaattca	ccctcctcac	240
gctglgggtg	tactttgatg	aaaataccca	ctttgttggc	ctttctgaag	ctataatgtc	300

<210> 241

<211> 301

<212> DNA

<213> Homo sapien

<400> 241

gaggtctggt	gctgaggtct	ctgggctagg	aagaggagtt	ctgtggagct	ggaagccaga	60
cctcttttga	ggaaactcca	gcagctatgt	tgggtgtctt	gaggggaatg	aacaaggctg	120
ctcctccatg	tattggaaaa	ctgcaaaactg	gactcaactg	gaagggaagt	ctgctgccag	180
tgtgaagaac	cagcctgagg	tgaagaaac	ggaagcaaac	aggaacagcc	agctttttct	240
tcctcctcct	gtcatacggg	ctctctcaag	catcctttgt	tgtcaggggc	ctaaaaggga	300
g						301

<210> 242

<211> 301

<212> DNA

<213> Homo sapien

<400> 242

ccgaggctcct	gggatgcaac	caatcaactct	gtttcacgtg	acttttcatca	ccatacaatt	60
tgtggcatttt	cctcatttttc	tacattgtag	aatcaagagt	gtaaataaat	gtatatcgat	120
gtcttcaaga	atatatcatt	ccttttttcac	tagaacccat	tcaaaatata	agtcaagaat	180
cttaatatca	acaaatata	caagcaact	ggaaggcaga	ataactacca	taatttagta	240
taagtaccca	aagttttata	aatcaaaaagc	cctaattgata	accattttta	gaattcaatc	300
a						301

<210> 243

<211> 301

<212> DNA

<213> Homo sapien

<400> 243

aggtaagtc	cagtttgaag	clcaaaagat	ctggatagag	cataggutca	togacgacat	60
ggtggcccaa	gctatgaaat	cagagggagg	cttcctctgg	gcctgtaaaa	actatgatgg	120
tgaagtgag	tggactctg	lqgcccagg	gtatggctct	ctggcctga	tgaacagcgt	180
gctggtttgl	ccagatggca	agacagtaga	agcagaggct	gcccacggga	ctgtaacccg	240
tcactaccgc	atgttcagag	aaggacagga	gacgtccacc	aatcccatg	cttccatttt	300
t						301

<210> 244

<211> 300

<212> DNA

<213> Homo sapien

<400> 244

gctggtttgc	aagatgaa	lgaatgatto	tacagctagg	acttaacott	gaaatggaaa	60
gtcatgcaat	cccatttgc	agatctgtct	gtacacatgc	ctctgtagag	agcagcattc	120
ccagggaaccl	tggaaacagt	tgacac:lgta	aggtgcttgc	tccccaaqac	acatcctaaa	180
aggtctttga	atggtgaaaa	ngtcttactc	ctttattggc	ctttcttatl	tatgtgaaca	240
actgtttgic	ttttgtgcat	ctttttttaa	ctgtaaagtt	caaltg:qaa	aatgaatatic	300

<210> 245

<211> 301

<212> DNA

<213> Homo sapien

<400> 245

gtctgagtat	ttaaaatggt	attgaaatta	tccccaaacca	atgttagaaa	agaaagaggt	60
tatatactta	gataaaaaat	gagggtgaatt	actatocatt	gaaatcatgc	tcttagaatt	120
aaggccagga	gatattgtca	ttaattgtara	cttcaggaca	ctagagtata	gcagccctat	180
gttttcaaaag	agcaagagatg	caatttaata	ttgttttagca	tcaaaaaggc	caatcaatc	240
agctaataaa	atgaagagcc	taattttctaa	agcaattctt	tataatttac	aaagttttca	300
g						301

<210> 246

<211> 301

<212> DNA

<213> Homo sapien

<400> 246

ggtctgtcct	acaatgcctg	cttcttgaaa	gaagtcggca	ctttctagaa	tagctaaata	60
acctgggctt	attttaaaga	actattttgt	gtcagattg	gttttcct t	ggclaaata	120
gtgcttctt	gtgaaaatta	aataaaacag	ttaattcaaa	gccttgatat	atgtaccac	180
taacaatcat	actaaatata	ttttgaagta	caaagtttga	catgctctaa	agtgacaacc	240
caaatgtgtc	ttacaaaaca	cgttcctaac	aagggtatgct	ttacactacc	aatgcagaaa	300
c						301

78

<210> 247
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 247
 aggtcctttg gcagggtcca tggatcagag ctcaactcgg agggaaaggc atttcgggta 60
 gcttaaggag gcgactggcg gcagucacac cuaggaaaggc aagggtgttt ccccaacgct 120
 ggtcctgttg ttcagggtgc gcacacacac ctcatgggaa caggatcacc catgcgctgc 180
 ccttgatgat caagggttgg gcttaagtgg attaagggag gcaagttctg ggttccttgc 240
 cttttcaaac catgaagtca ggcctctgat cctcctttt cctaactgat attctaacta 300
 a 301

<210> 248
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 248
 aggtccttgg agatgccatt tcagccgaag gactcttctw ttcggaggta caccctcact 60
 attaggaaga ttcttagggg taatttttct gaggaaggag aactggccaa cttuagaatt 120
 acagggaaga agtggttttg aagacagcca aagaataaa agcagettac attgtatcag 180
 gtacattcca gctgtttggc aactccataa aaacatttca gattttaato cccaatttag 240
 ctatgagac tggatttttg ttttttatgt tgtgtgtcgc agagcctaaa actcagttcc 300
 c 301

<210> 249
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 249
 gtccagagga agcacctggt gctgaactag gcttgccctg ctgtgaactt gcacttggag 60
 cctgacgct gctgttctcc ccgaaaaacc cgaccgacct ccgggctctc cgtcccgccc 120
 ccaggagagc acagcagtg ctcagagctg gtgcacact gtgctccct cctcaccgcc 180
 catgtaatg aattattttg aaaattaatt ccaccatcct ttcagattct ggaaggaaag 240
 actgaatctt tgactcagaa ttgtttgctg aaaagaatga tgtgacttct ttagtcaatt 300
 a 301

<210> 250
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 250
 ggtctgtgac aaggacttgc aggcctgtgg aggcagglaa cccttaacac tacacttctc 60
 ctatcttta ttggcttgat aaacataatt atttctaaca ctgcttatt tccagttgcc 120
 cataagcaca tcagtacttt tctctggctg gaatagttaa cttaagtatg gtacatctac 180
 ctaaaagact actatgttga ataatacata ctaatgaagt attacatgat ttaagacta 240
 caataaaacc aaacatgctt ataacattaa gaaaaacaat aaagatcctt gattgaaccc 300
 a 301

<210> 251
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 251
 gccgaggtcc tacattttgc ccagtttccc cctgcattct ctccagggcc cctgcctcat 60
 aqacacacct atagagcata ggaggaactgg ttgcccctgg ggcaggggga ctgtctggat 120
 ggcaggggtc ctcaaaatg ccaatgtcac tgccaggaaa tgcttctgag cagtacacct 180
 ccttgggalc aatgaaaagc tlcagaaat cttcaggctc actctcttga aggcccgaa 240

cctctggagg ggggcagtg aatcccagct ccaggacgga tctgtcgaa aagatatcct 300
c 301

<210> 252
<211> 301
<212> DNA
<213> Homo sapien

<400> 252
gcaaccnate actctgtttc acgtgacttt tateaccata caatttggtg catttcccca 60
ttttctacat tgtagaatca agagtgtana taaatgtata tcatgtcttt caaguatata 120
tcattccctt ttcactagga acccattcna aatataugtc aaqaatctta atatcaacaa 180
atatatcaag caaactggaa ggcagatna olaccataat ttagtataag taccuuaagt 240
tttataaate aaaaagccct alqataacca tttttagaat tcaatcatca ctgtagaate 300
a 301

<210> 253
<211> 301
<212> DNA
<213> Homo sapien

<400> 253
ttccctaaga agatgttatt ttgttgsggt ttgttccccc tccatctega ttctcgtaac 60
caactaaaaa aaaaaaataa agaaaaaatg tgcctgcgtt tgaaaaataa ctcccttagct 120
tggtctgatt gttttcagac cttaaaatac aaacttggtt cacaagcttt aatccatgtg 180
gatttttttt cttagagaa cacaanaacet aaaaggagca agtcggactg aataccgttt 240
tccatagtgc ccacagggtt ttctctacat tttctcata ggaaaatgct ttttcccaag 300
g 301

<210> 254
<211> 301
<212> DNA
<213> Homo sapien

<400> 254
cgctgcgect ttcccttggg ggagggggcaa ggccagaggg ggtccaagtg cagcacgagg 60
aacttgacca attcccttga agcgggtggg ttaaaccctg taaatgggaa caaaatcccc 120
ccaaatctct tcatcttacc ctggtggact cctgactgta gaattttttg gttgaaacaa 180
gaaaaaataa aagcttttga cttttcaagg ttgcttaaca ggtactgaaa gactggcctc 240
acttaaaactg agccaggaaa agctgcagat ttattaatgg gtgtgttagt gtgcagtgc 300
t 301

<210> 255
<211> 302
<212> DNA
<213> Homo sapien

<400> 255
agcttttttt tttttttttt tttttttttt ttcatnaaaa astagtgtc tttattataa 60
attactgaaa tgtttctttt ctgaatataa atataaatat gtgcaaagtt tgacilqqat 120
tgggattttt ttgagttctt caagcatctc ctaataccct caagggcctg agtagggggg 180
aggaaaaagg actggaggtg gaatctttat aaaaaacaag agtgattgag gcagatttgt 240
aacattatta aaaaacaaga aacaaacaaa aaaatagaga aaaaaccac ccaaacacac 300
aa 302

<210> 256
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature

<222> {1}...{301}

<223> n = A, T, C or G

<400> 256

gttccagaaa	acattgaagg	tggcttccca	aagtctaact	agggataccc	cctctagcct	60
aggaccctcc	tcccacaacc	tcaatccacc	aaaccatcca	taatgcaccc	agataggccc	120
acccccaaaa	gocctggacc	cttgagcaca	cagttatgac	caggacugac	tcatctctat	180
aggcaaatag	ctgctggcaa	actggcatta	cctggtttgt	ggggatgggg	gygcaagtgt	240
gtggcctctc	ggcctgggta	gcaagaacat	tcagggtagg	cctaagttan	tcgtgttagt	300
t						301

<210> 257

<211> 301

<212> DNA

<213> Homo sapien

<400> 257

gttgtggagg	aactctggct	tgtctattaa	gtcctactga	ttttcactat	ccccgaatt	60
tcccaccta	ttttgtctt	tcaatatgc	aggccttaga	agaggtctac	ctgcctccag	120
tcttacctag	tccagtctac	ccccggagt	tagaatggcc	atcctgaagt	gaaaagtaat	180
gtcacattac	tcccttcagt	gatttcttgt	agaagtggca	atccctgaat	gccaccaaga	240
tcttaattct	cacatcttta	atcttatctc	tttgactcct	ctttacaccg	gagaaggctc	300
c						301

<210> 258

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{301}

<223> n = A, T, C or G

<400> 258

cagcagtagt	agatgccgta	tgccagcacg	cccagcactc	ccaggatcag	caccagcacc	60
agggggccag	ccaccaggcg	cagaagcaag	ataaacagta	ggctcaagac	cagagccacc	120
cccagggcaa	caagaatcca	ataccaggac	tgggcaaaat	cttcaagat	cttaacactg	180
atgtctcggg	cattgaggct	gtcaataana	cgctgatccc	ctgctgtatg	gtgggtgtcat	240
tggatgatcc	tgggagcgcc	ggtggagtaa	cyttgggtcca	tggaaagcag	cgcccacaac	300
t						301

<210> 259

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> {1}...{301}

<223> n = A, T, C or G

<400> 259

tcatatatgc	aaacaaatgc	agaactangcc	tcaggcagag	actaaaggac	atctcttggg	60
gtgtcctgaa	gtgatttggg	cccctgaggg	cagacaccta	agttaggaatc	ccagtgggaa	120
gcaaagccat	aaggaagccc	aggattcctt	gtgatcagga	agtgggccag	gaaggctctgt	180
tccagctcac	atctcatctg	catgcagcac	ggaccggatg	cgcccactgg	gtcttggctt	240
ccctcccatc	ttctcaagca	gtgtccttgt	tgagccattt	gcctccttgg	ctccagggtgg	300
c						301

<210> 260

<211> 301

<212> DNA
<213> Homo sapien

<400> 260
 tttttttttt cccctaaggaa aaagaaggaa caagtctcat aaaaaaaaat aagcaatggt 60
 aaggtgtctt aaactgaana agattaggag tcactggllt acaagtata attgaatgaa 120
 agaaactgtaa cagccacagt tggccatttc atgccaatgg cagcaaacaa caggattaac 180
 tagggcaaaa taataaagtg lgtggaagcc ctgataagtg cttaataaac agactgaatc 240
 actgagacat cagtaacctgc cggggcggcc gclcgagccg aatcctgcag atatccatcc 300
 c 301

<210> 261
<211> 301
<212> DNA
<213> Homo sapien

<400> 261
 aaatattcga gcaaatcctg taactaatgt gtctccataa aaggctttga actcagtga 60
 tctgcttcca tccacgattc tagcaatgac ctctcggaca tcaaaagctcc tottaagggt 120
 agcaccaaat attccatata attcatcagc aggaataaaa ggctcttcag aaggttcaat 180
 ggtgacatcc aatttcttct gataatttag attcctcaca accttctag ttaagtgaag 240
 ggcattgatg tcatccaaag cccagtggtc acttaactca gactttctgc aatgaagatc 300
 a 301

<210> 262
<211> 301
<212> DNA
<213> Homo sapien

<400> 262
 gaggagagcc tggtacagca tttgtaagca cagaatactc caggagtatt tgtaattgtc 60
 tgtgagcttc ttgcgcgaag totctcagaa atttaaaaag atgcaaatcc ctgagtcacc 120
 cctagacttc ctaaaaccaga tctcttgggg ctggaacctg gcactctgca tttgtaatga 180
 gggctttctg gtgcacacct aattttgtgc atctttgccc taaatcctgg attagtccc 240
 catcattacc cccacattat aatgggatag attcagagca gatactctcc agcaagaat 300
 c 301

<210> 263
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> {1}...{301}
<223> n = A, T, C or G

<400> 263
 tttagcttgt ggtaaatgac tcacaaaact gattttaaaa tcaagttaat gtgaattttg 60
 aaaattacta cttaatccta attcacaata acaatggcat taaggtttga cttgagttgg 120
 ttcttagtat tatttatggt aaataggctc ttaccacttg caaataactg gccacatcat 180
 taatgactga ctccocagta aggtctctta aggggtaagt angaggatcc acaggatttg 240
 agatgctaag gccccagaga tcttttgatc caacctctt attttcagag gggaaaattg 300
 g 301

<210> 264
<211> 301
<212> DNA
<213> Homo sapien

<400> 264
 aaagacgtta aaaaactcta ctaccacttg tggaaacttc aaaaqqtaaa tgacaaacc 60

aatgaatgac	tctaaaaaca	atattttacat	ttatlggttt	gtagacaata	aaaaaacaag	120
gtggatagac	ctagaattgt	aacalittaa	gaaaaccata	scatttgaca	gatgagaaag	180
ctcaattata	gacgcaaaqt	tataactaaa	ctactatagt	agtaaagaaa	tacatttcac	240
acccttcata	ttaattcact	alcllggctt	gaggcaactcc	atanaatgta	tcacgtgcac	300
a						301

<210> 265
 <211> 301
 <212> DNA
 <213> Homo sapien

tgcccaagtt	atgtgtaagt	gtatccgcac	ccagaggtaa	aactacactg	toaletttgt	60
cttcttgta	cgcagtattt	cttctctggg	gagaagccgg	gaagtcttct	cctggctctc	120
catattcttg	gaagtctcta	atcaactttt	gttccatttg	tttcatttct	tcaggagggg	180
ttttcagttt	gtcaacatgt	tctctaaca	caactggcca	tttctgtaaa	gsatccaaag	240
cagtccaagg	ctttgacatg	tcaacaacca	gcataactag	agtatccttc	agagatacgg	300
c						301

<210> 266
 <211> 301
 <212> DNA
 <213> Homo sapien

taccgtctgc	cttctctccc	atccaggcca	tctgcgaatc	tacatgggtc	ctcctattcg	60
acaccagatc	actclttcct	ctaccacacg	gottgctatg	agcaagagac	acaacctcct	120
ctctctctgc	lccacgcttc	lllctctggt	cttcccaacc	cttaagttct	attcctgggg	180
alagagacac	caatccccat	aacctctctc	ctaagctctc	ttataacca	gggtgcacag	240
cacagaatcc	tgaccaactg	taaggccaat	gaactgggag	ctcacagclg	gctgtgcttg	300
a						301

<210> 267
 <211> 301
 <212> DNA
 <213> Homo sapien

aaagagacaa	ggccagctca	gctgcccctg	gccatctaga	ctcagccctg	ctccatgggg	60
gttclcaagt	ctgagtcuat	ccaggaaaag	ctcacctaga	ccttctgagg	ctgaatcttc	120
atctctcaag	gcagclcttg	agagcctgat	attcctagcc	ttgatgggtc	ggagtaange	180
ctcattctga	lclctctcct	lcttttcttt	caagtgggtt	ttcctcacat	cctctgttct	240
aatctgcttc	agcttgclcg	ctttaagcct	catttccaga	agcttcttct	ctttggcctc	300
t						301

<210> 268
 <211> 301
 <212> DNA
 <213> Homo sapien

aatgtctcac	tcaactactt	cccagcctac	cgtggccctaa	ttctgggagt	tttcttctta	60
gatcttgagg	gagctgggtc	ttctaaggag	aaggaggaaag	gacagatgta	actttggatc	120
togaagagga	agtctaattg	aagtaattag	tcaacggctc	ttgttttagac	tcttgggaata	180
tgtgggtgg	ctcagtgagc	ccttttgagg	aaagcaagta	ttattcttaa	ggagtaacca	240
cttcccatgg	ttctaatttc	taccatcctc	aattgtatat	tatgtattct	ttggagaact	300
a						301

<210> 269
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 269
 taacaatata cactagatat ctttttaact gtccatcatt agcaccaatg aagattcaat 60
 aasattacct ttattcacac atctcaaaac aattctgcaa attcttagtg aagtttaact 120
 atagtcacag acottaaata ttacacattgt ttctctatgt tactgaaaat aagttcaacta 180
 cttttctgga tattctttac aaaatottat taaaattcct ggtattatca cccccaatta 240
 tacagtagca caaccaoctt atgtagtitt tacatgatag ctctgtagaa gtttcaactc 300
 t 301

<210> 270
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 270
 cettgaagag ctcttgagaa acatcagaa acnagtgtt atanaattaa ttaagcetta 60
 cacaagaata catattcatt ttattttctaa ggagtttaac atagatgtag ctgatgtgga 120
 gagcttgctg gtgcagtgca tattggataa cactattcat ggccgaattg atcaagtcac 180
 ccaactcatt gaactggatc atcagaagaa gggtygtgca ccatatactg cactagataa 240
 tggaccaacc aactaaattc tctcaccagg ctgtatcagt aaactggett aacagaaaaa 300
 a 301

<210> 271
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 271
 aaaaggttct cataagcttc acaatttaaa taacttttg atagaaacatt ctttctcatt 60
 ttatagctc atcttttagg ttgatactca gtctatgctt ccttgctgt tcttgatcca 120
 gaattgcaat cacttcacac gctgttattc gctccaattc tclataaagt gggtcnaagg 180
 tgaaccacag agccacagca cactctttc ccttggtgac tgccttcacc ccatgagggt 240
 tctctctccc agatganaac tgatcctgag cccacatttt gggttttata gaagcagtcac 300
 c 301

<210> 272
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 272
 taanattgcta agccacagat aacaccaatc aantgganac aatcactgtc ttcaaatgtc 60
 ttatcagaaa acccaatgag cctggaattc tctataatcc taacatgccc gtatttagga 120
 tccaataatt cctcatgat gagcaagaaa aattctttgc gccccctcc tgcacccaca 180
 gcatcttctc caacaaatat aaccttgag: ggcctctctt aactctatgt ctttggtttc 240
 ctaaggactt ccattgcac tctacacata ttctctctac gccccactag aattaagvag 300
 g 301

<210> 273
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 273

acatgtgtgt	atgtgtatct	ttgggaaan	anaagacat	cttgtttayt	atTTTTttgg	60
agagangctg	ggacatggat	aatcacwtaa	tttgctayta	tyactttant	ctgactygaa	120
gaaccgtcta	aaaataaaat	ttaccatgtc	dtatatctct	tatagtatgc	ttatttcacc	180
ttyttctgt	ccagagagag	tatcagtgac	ananattma	gggtgaamac	atgmattggt	240
gggacttnty	tttaengagm	accctgcccg	sgcgccctcg	makcngantt	ccgcsananc	300
t						301

<210> 274

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 274

cttatataact	ctttctcaga	ggcaaaagag	gagatgggta	atgtagacaa	ttctttgagg	60
aacagtaaat	gattattaga	gagaangaat	ggaccaagga	gacagaaatt	aacttgtaaa	120
tgattctctt	tggaaatctga	atgagatcaa	gaggccagct	ttagcttggt	gaaaagtcca	180
tctaggtatg	gttgcatctc	cgtcttcttt	tctgcagtag	ataatgaggt	aaccgaaggc	240
aattgtgctt	cttttgataa	gaagctttct	tggtcataat	aggaaattcc	aganaaagtc	300
c						301

<210> 275

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C or G

<400> 275

tgggtgtcag	cagcacgtgg	cattgaacat	tgcactgtgg	agcccaaacc	acagaaaatg	60
gggtgaaatt	ggccaaactt	ctattaactt	atgttggcaa	ttttgccacc	aacagttaagc	120
tggcccttct	aataaaagaa	aattgaaagg	tttctcacta	aacgggaatta	agtagtggag	180
tcaagagact	cccaggcctc	agcgtacutg	ccugggcggc	cgctcgaagc	cgaattctgc	240
agatatccat	cacactggcg	gncgctegan	catcatctct	gaaggnccaa	ttcgccctat	300
a						301

<210> 276

<211> 301

<212> DNA

<213> Homo sapien

<400> 276

tgtacacata	ctcaataaat	aatgactgc	attgtggtat	tattactata	ctgattatat	60
ctatcatgtg	acttctaatt	agaaaatgta	tccaaaagca	aaacagcaga	tatacaaaat	120
taaagagaca	gaagatagac	attaacagat	aaggcaactt	atacattgag	aatccaaate	180
caatacatit	aaacatttgg	gaaatgaggg	ggacaaatgg	aagccagatc	aaatttgggt	240
aaaactattc	agtatgttcc	ccttgcttca	tgtctgagaa	ggctctcctt	caatggggat	300
g						301

<210> 277

<211> 301

<212> DNA

<213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A, T, C or G

<400> 277
 tttgttgatg tcagtatttt attactttgcg ttatgagtgc tcacctggga aattctaaag 60
 atacagagga cttggaggaa gcagagcaac tgaatttaac ttaaaagaag gaaaacattg 120
 gaatcatggc actcctgata ctttcccaaa tcaacactct caatgcccc cctcgtcct 180
 caccatagtg gggagactaa agtggccacg gatttgcctt angtgtgcag tgcgttctga 240
 gttcctgtc gattacatct gaccagtctc ctttttccga agtccttcog ttcaatcttg 300
 c 301

<210> 278
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A, T, C or G

<400> 278
 taccactaca ctccagcctg ggcaacagag caagacctgt ctcaaagcat aaaatggaat 60
 aacelataca atgaaacagg gaaaatgaag ctgacaattt atggaagcca gggcttgcga 120
 cagtctctac tgttattatg cattacctgg gaatttatat aagcccttaa taataatgcc 180
 aatgaacatc tcatgtgtgc tcacaatgtt ctggcactat tataagtgtc tcacaggttt 240
 tatgtgttct tegttaacttt atggantagg tactcggcog cgaacacgct aagccgaatt 300
 c 301

<210> 279
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A, T, C or G

<400> 279
 aaagcaggaa cgacaaagct tgctttctcg gtatgttcta ggtgtattgt gacttttact 60
 gttatattaa ttgccaatat aagtaaatat agattatata tgtatagtgt ttcaaaagc 120
 ttagaccttt acctccagc caccocacag tgcttgatat ttcagagtca gtcattgggt 180
 atacatgtgt agttccaaag cacataagct agaanaanaa atattttctag ggagcactac 240
 catctgtttt cacatgaat gccacacaca tagaactcaa acatcaattt cattgcacag 300
 a 301

<210> 280
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 280
 ggtaclggag ltttctccc ctgtgaaaac gtaactactg ttgggagtga attgaggatg 60
 tagaaagggt gtggaaccaa attgtggtca atggaaatag gagaatatgg ttctcactct 120
 tgagaaaaaa acctaaagatt agccacagta gttgcctgta acctcagttt ttctgectgg 180
 gcttgarata gtttaggggt ggggttagat taagatctaa attacatcag gacaaagaga 240
 cagactatta actccacagt taattaagga ggtatgttcc atgtttattt gttaaagcag 300
 t 301

86

<210> 281
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 281
 aggtacaaga aggggaatgg gaaagagctg ctgctgtggc attgtccaac ttggatatcc 60
 gccgagcaat ccaaactcctg aatgaagggg catcttctga aaaaggagat ctgaatctca 120
 atgtggtagc aatggcttta tcgggttata cggatgagaa gaactccctt tggagagaaa 180
 tgtgtagcac actgcgatta cagctaaata acccgatttt gtgtgtcatg ttgcatttcc 240
 tgacaagtga aacaggatct tacgatggag ttttgtatga aaacaaagtt gcagtaacct 300
 g 301

<210> 282
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 282
 caggtactac agaatataaa tactgaacag caagtatgtt cttaggctgc acgaattgca 60
 tccagaaccc aaaaatttaag aaattcaaaa agacattttg tgggcacclg ctagcacaga 120
 aqccagagag caaagcccaq gcagaaocat gctaaccttc cagctcaacc tgcacagaaq 180
 cgcagaaagc aagcccaggc agaacctatg taaccttaca gctcagctg cacagaaagc 240
 caggaagcaa gccnaggcag aacatgctaa ccttacagct cagcctgcac agaaagcacg 300
 a 301

<210> 283
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 283
 atctgtatac ggcagacaaa ctttatarag tgtagagagg tgagcgaag gatgcnaag 60
 cactttgagg gutttataat aatctctctg ttgaaaaaa aaatgtgtg ttgclactca 120
 gtgcataccc agacatagta aggggttgccl clgacccatc aggtgatcccl ttttctctac 180
 aettcccagg ttttatgcac aaatttttgt aaattctata atggcgatat gcatttttta 240
 ggaaacctat acatllttaa aaatctattt tatgtaagaa ctgacagacg aatttgcttt 300
 g 301

<210> 284
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 284
 caggtacaaa accctattta gtggcttaga atttgaacat ttgtggtctt tatttaacttt 60
 gottcgtgtg tgggcacaaag aacatcttcc ctaaaatat attaccaaga aaagcaagaa 120
 gcagattagg tttttgacaa aacaaacagg ccnaaagggy gctgacctgg agcagagcat 180
 ggtgagagac aagguatgag agggcaagtt tgttgtggac agatctgtgc ctactttatt 240
 actggagtac aaggaacaaag agttuattga tgcgaagga tatatacagt gttagaantt 300
 a 301

<210> 285
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n ~ A,T,C or G

<400> 285

acatcaccat gatcggatcc cccacccatt ataogttgta tgtttacata aatactcttc	60
aatgatcatt agtgttttaa aaaaaatact gaaaactcct tctgcacccc aatctctaac	120
caggaaagca aatgctatit acagacctgc aagccctccc tcaaacnaaa ctattttctgg	180
attaaatatg totgacttct tttgaggfca caccgactagg caaatgctat ttacgatctg	240
caaaagctgt ttgaagagtc aaagccccc tgtgaacacg atttctggac cctgtaacag	300
t	301

<210> 286

<211> 301

<212> DNA

<213> Homo sapien

<400> 286

tacccactgc ttccagcctg gctgacagag tgagactccg tctccaaaa aactcttctg	60
tglatattct tlltgcctta cagtggaacc ttctagttag aagggaacgt agattttll	120
atcaaaatgt gtcctgccag taagagatgt tatattcttt tctccttct tccccacca	180
aaaataagct acctatagc ttataagfct caaatllttg ccttttacta aaatgtgatt	240
gtttctgttc attgtgtatg cttcctcacc tataattaggc aaattccctt tttcccttg	300
t	301

<210> 287

<211> 301

<212> DNA

<213> Homo sapien

<400> 287

tacagatctg ggaactaaat attaaaaatg agtgtggctg gatatatgga gaatgtctgg	60
cccagaagga acgtagagat cagatattac aacagctttg ttttgagggt tagaatatg	120
aaatgatttg gttctgaacg cccagtttag gcagcagggc cagaatcctg acctctggcc	180
cagtggttat clactccca gcttgctgc ctcatgllat cccagtatto cattllggtt	240
gttgcatgtc ttgtgaagcc atcaagcttt tctcgtctgt tttcctctca ttggtaatgc	300
t	301

<210> 288

<211> 301

<212> DNA

<213> Homo sapien

<400> 288

gtacacctaa ctgcaaggac agctgaggaa tghtaatggc agccgctttt aaagaagtag	60
agtcaatagg aagacaaatt ccagttccag ctcagtcctg gtatctgcaa agctgcacaa	120
gatctttaaa gacaatttca agagaaatatt toottaaggt tggcaatttg gagatcctac	180
aaaagcatct gcttttgtga ttttaatttag ctcatctggc cactggaaga atccaaacag	240
tctgccttaa ttttgatga atgcatgctg gaaattcaat aatttagaaa gttaaaaaaa	300
a	301

<210> 289

<211> 301

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(301)

<223> n = A,T,C r G

<400> 289

ggtacactgt ttccatgta tgtttctaca cattgctacc tcagtgtctc tggaaactta	60
gcttttgatg tctccagta gtccaccttc atttaactct ttgaaactgt atcatctttg	120
ccaagtaaga gtggtggcct tttcagctg ctttgacaaa atgactggct cctgacttaa	180

cgttctataa atgaatgtgc tgaagcaaaag tgccaatggc ggcgggcgaan aagaqaaaga 240
 tgtgttttgt tttggactct ctgtggtccc ttccaatget gtgggtttcc aaccagngga 300
 a 301

<210> 290
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 290
 acactgaget cttcttgata aatatacaga atgcttggca tatacaagat tctatactac 60
 tgactgatct gttcatttct ctcacagctc ttaccccca aagcttttcc accctaagtg 120
 ttctgacctc cttttctaata cacagtaggg atagaggcag anccacctac aatgaacatg 180
 gagttctatc aagaggcaga aacagcacag aatcccgatt ttaccattcg ctagcagtgc 240
 tgccttgaac aaaaacattt ctccatgtct cttttcttc atgctcaag taacagtga 300
 a 301

<210> 291
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 291
 caggtaacaa tttctttctat cctagaaccc tttcatttta tgttgttgaa acataaacaac 60
 tatatcagct agatlltlll tctatgcttl aculgcclatg gaaaalllga cacattctgc 120
 tttactcttt tgtttatagg tgaatcacia aatgtatttt tatgtattct gtagttcaat 180
 agccatggct gtttacttca tttaatittat ttagcataaa gacattatga aaaggcctaa 240
 acatgagctt cacttcccca ctaactaatt agcatctgtt atttcttaac cgtaatgcct 300
 a 301

<210> 292
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(301)
 <223> n = A,T,C or G

<400> 292
 accttttagt agtaatgtct aataataaat aagaaatcaa ttttataagg tccatatagc 60
 tgtattaaat aatttttaag tttaaaagat aaaataccat cattttaaat gttggtattc 120
 aaaacccaaag natataaccg aaaggaaaaa cagatgagac ataaaatgat ttgcnagatg 180
 ggaaatatag taatttatga atgttnatta aattccagtt ataatagttg ctacacactc 240
 tcactacaca cacagacccc acagtcctat atgcacaaa cacatttcca taacttgaaa 300
 a 301

<210> 293
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 293
 ggtaccagt gclqqlqcca gactgttacc tgttctcact gaaaagtctg gcta tgcctc 60
 tlqlqbaglc acttctgatt ctgacantua atcaatcaat ggccatagag actgactgtt 120
 aacacaaacg tccclagcaa agtagcaacu gctttaagtc tcaatacaaa gctgttctgt 180

89

```

gtgagaattt tttaaaaggc tacttgata ataacccttg tcatttttaa tgtacctggg      240
ccgcgaccac gctaagccga attctgcaga tatccatcac actggcgggc gctcgagcat      300
g                                                                                   301

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<210> 294
<211> 301
<212> DNA
<213> Homo sapien

```

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<220>
<221> misc_feature
<222> (1)...(301)
<223> n = A,T,C or G

```

```

<400> 294
tgaccataa caatatacac tagatatott tttaatgtgc catcattagc accaatguag      60
attcaataaa attacottta ttcaacatc tcaaaaacaa ttgcauatt cttagtgaag      120
tttaactata gtcacaganc tttaatattc acattgtttt ctatgtctac tgaagaatag      180
ttcaactact ttctgggata ttctttacaa aatcttatta aaattcctgg tattatcacc      240
cccaattata cagtagcaca accaccttat gtagltttta catgalagcl ctgtagagggt      300
t                                                                                   301

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```

<210> 295
<211> 305
<212> DNA
<213> Homo sapien

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```

<400> 295
gtacttttcc tctccctccc tctgaattta attctttcaa cttgcaattt gcaaggatta      60
cacatttcac tgtgatgtat atttgtgttc aaaaaaaa gtgtcttctg ttaaaattac      120
ttggtttgtg aatccatctt gctttttccc cattggaaat agtcattaac ccattctctga      180
actggtagaa aaactcttga agagctagtc tatcagcacc tgcaggtga attggatggg      240
tctcagaacc atttcaccca gacagcctgt ttctatcctg ttttaataat taqtttgggt      300
tctct                                                                                   305

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```

<210> 296
<211> 301
<212> DNA
<213> Homo sapien

```

```

<400> 296
aggtactatg ggaagctgct aaaataatat ttgatagtaa aagtatgtaa tgtgctatct      60
cacctagtag taacttaaaa ataaactgaa actttatgga atctgaagtt atttctctg      120
attaatatga attaataaac caatatgagg aaacatgaaa ccattgcaat tactatcaac      180
tttgaaaaag tgattgaacg aaccacttag ctttcagatg atgaacactg ataagtcatt      240
tgtcattact ataaatttta aaatctgtta ataagatggc ctatagggag gaaaaagggg      300
c                                                                                   301

```

```

<210> 297
<211> 300
<212> DNA
<213> Homo sapien

```

```

<220>
<221> misc_feature
<222> (1)...(300)
<223> n = A,T,C or G

```

```

<400> 297
actgaatttt aactggacgc caagcaggca aggetggaag gttttgctct ctttggtcta      60
aaggttttga aaacttgaa ggagaatcat ttgacaaga agtacttaag agtctagaga      120
acaaagangt gaaccagctg aaagctctcg ggggaanctt acatgtgttg ttaggcctgt      180

```

90

tccatcattg	ggagtgcact	ggccatccct	caaaatttgt	ctgggctggc	ctgagtggtc	240
accgcacctc	ggccgcgacc	acgctaagcc	gaattctgca	gatatccatc	acactggcgg	300

<210> 298
 <211> 301
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> {1}...{301}
 <223> n = A,T,C or G

<400> 298						
tatggggttt	gtcaccctaa	agctgatgct	gagaaaggcc	tccctggggc	ccctcccgog	60
ggcatctgag	agacctgggt	ttccagtgtt	tctggaaatg	ggtcccagtg	cgcgcggctg	120
tgaagctctc	agatcaatca	cgggaagggc	ctggcggtgg	tggccacctg	gaaccacctc	180
gtcctgtctg	tttacatttc	actaycaggt	ttctctctgg	cattacnatt	tgttccccta	240
caacagtgac	ctgtgcattc	tgtgtgtggc	tgtgtgtgtc	gcaggtggct	ctcagcgagg	300
t						301

<210> 299
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 299						
gttttgagac	ggagtttcac	tcttgttgcc	cagactggac	tgcaatggca	gggtctctgc	60
tcactgcacc	ctctgcctcc	caggttcgag	caattctcct	gcctcagcct	cccaggttagc	120
tgggattgca	ggctcagccc	accataccca	gctaattttt	ttgtattttt	agtagagacg	180
gagtctcgcc	atgtttggca	gctggtctca	aactcctgac	ctcaagcgac	ctgcctgcct	240
cggcctccca	aagtgtctga	attataggca	tgagtcacaa	cgcctcagcct	aaagatattt	300
t						301

<210> 300
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 300						
attcagtttt	atttgcctcc	ccagtatctg	taaccaggag	tgccacaaaa	tcttgccaga	60
tatgtccac	accactggg	aaaggctccc	acctggctac	ttcctctatc	agctgggtca	120
gctgcattcc	acaaggctct	cagcctaatt	agtttcaact	cctgccagtc	tcaasactta	180
gtaaagcaag	accatgacat	tccccacgg	aaatcagagt	ttgccccacc	gtcttgttac	240
tataaagcct	gcctctaaca	gtccttgctt	ottcacacca	atcccagagc	catcccccat	300
g						301

<210> 301
 <211> 301
 <212> DNA
 <213> Homo sapien

<400> 301						
ttaaattttt	gagaggataa	aaaggacaaa	taatctagaa	atqlqhtcttc	tlcagtcctgc	60
agaggacccc	aggtctccaa	gcaaccacat	ggtcaagggc	atgaatcatt	aaaagtctgt	120
gggaactcac	aaagaccctc	agagctgaga	cacccacaac	agtgggagcl	cacaaagacc	180
ctcagagctg	agacacccac	aacagtggga	gctcacaaag	acccctcagag	ctggagaccc	240
cccacacgca	cctcgttcag	ctgccacatg	tgtgaataag	gatgcacatgt	ccagaagtgt	300
t						301

<210> 302
 <211> 301

<212> DNA
<213> Homo sapien

<400> 302
aggtacacat ttagcttggt gtaaatgact cacaaaactg attttaaaat caagttaatg 60
tgaattttga aaattactac ttaactctaa ttcacaataa caatggcatt aaggtttgac 120
ttgagttggt tcttagtatt atttatggta aataggctct taccacttgc aaataactgg 180
ccacatcatt aatgactgac ttcccagtaa ggctctctaa ggggtaagta ggaggatcca 240
caggatttga gatgctaagg ccccagagat cgtttgatcc aacctctta ttttcagagg 300
g 301

<210> 303
<211> 301
<212> DNA
<213> Homo sapien

<400> 303
aggtaccaac tgtggaaata ggtagaggat catftttttct ttccatatac actaagttgt 60
atattgtttt ttgacagttt aacacatctt cttctgtcag agattctttc acaatagcac 120
tggctaattg aactaccgct tgcattgtta aaatgggtgt ttgtgaattg etcataggcc 180
agtaacgggt atgtttttct aactgatctt ttgtctcttc caaagggaac taaagcttc 240
catgatttt atctctgggg tctagaaaaa gagttaatct gttttccctc ataaattcac 300
c 301

<210> 304
<211> 301
<212> DNA
<213> Homo sapien

<400> 304
acatggatgt tattttgcag actgtcaacc tgaatttcta tttgcttgac attgcctaatt 60
tattagtttc agtttcagct taccacattt ttgtctgcaa catgcaraas agacagtgcc 120
cttttttagtg tatcatatac ggaatcatct cacattggtt tgtgccatta ctggtgcagt 180
gactttcagc cacttgggta aggtggagtt ggccatctgt ctccactgca aaattactga 240
ttttcctttt gtaattanta agtggtgtgt tgaagattct ctgaagtga gtatatact 300
c 301

<210> 305
<211> 301
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1)...(301)
<223> n = A,T,C or G

<400> 305
gangtacagc gtggtcaagg taacaaqaag aaaaaaatgt gagtggcctc ctgggatgag 60
cagggggaca gacctggaca gacacgttgt calttctctc tgtgggtagg aacatgggcy 120
taaaggagga gaaacagata ccaaaletcc aactcaglat taaggtatct tcatgcctag 180
aatatttgta gaaacaagaa tacattcata tggcaaatca claaaccatgg tggaaacaaa 240
ttctgggatt taagliggat accaangaaa ttgtattaaa agagctcttc atygaataag 300
a 301

<210> 306
<211> 8
<212> PRT
<213> Homo sapien

<400> 306
Val Leu Gly Trp Val Ala Glu Leu

1

5

<210> 307
 <211> 637
 <212> DNA
 <213> Homo sapien

<400> 307

acagggratg	aagggaag	gagaggatga	ggaagcccc	ctggggattt	ggtttggtcc	60
ttgtgatcag	gtggtctatg	gggtttatcc	ctacaaagaa	gaatccagaa	ataggggcac	120
attgaggaat	gatacttgag	cccaaagagc	attcaatcat	tgtttttattt	gccttmtttt	180
cacaccattg	gtgaggagag	gattaccacc	ctggggttat	gaagatgggt	gaacacccca	240
cacattagc	cggagatag	agatcaacag	tttcttagcc	atagagattc	acagccuaga	300
gcaggaggac	gcttgccac	catgcaggat	gacatggggg	atgcgctcgg	gattgggtgtg	360
aaggaagcaag	gactgttaga	ggcaggcttt	ataqtaacaa	gacgggtggg	caaatctctga	420
tttccgtggg	ggaatgtcat	ggtcttgctt	tactaagttt	tgagactggc	aggtaglqaa	480
actcattag	ctgagaaact	tgtggaalgc	acttgaccca	actgatagag	gaagtggcca	540
ggtaggggac	tttcccaagt	ggtgtgggac	atatctggcc	agatlltgkg	gcactcctgg	600
ttacagatag	tggggcagca	aataaaactg	aactcttg			637

<210> 308
 <211> 647
 <212> DNA
 <213> Homo sapien

<220>

<221> misc_feature

<222> (1)...[647]

<223> n = A,T,C or G

<400> 308

acgattttaa	ctctcatgta	atcggggtca	ctcaaggggc	caacacacagc	tgggagccac	60
tgtcagggg	aagggttcta	tggaactllc	tactgcccaa	ggttctatag	aggatataaa	120
ggngcctcac	agtalagatc	tggtagcaaa	gaagaagaaa	caaacactga	tctctttctg	180
caacccctct	gacccttttg	aactcctctg	accttttaga	acaagcctac	ctatatactg	240
ctagagaaaa	gaccaacaac	ggcctcaaa	gatctcttac	catgaaggtc	tcagctaatt	300
cttggctaag	atgtgggttc	cacattaggt	tctgaatatg	gggggaaggg	tcaatttgc	360
catttttgt	gtggataaag	tcaggatgcc	caggggccag	agcagggggc	tgcttgcttt	420
gggaacaatg	gctgagcata	taaccatagg	ttatggggaa	caaaaacaaca	tcaaaagtcac	480
tgtatcaatt	gocatgaaga	cttgagggac	ctgaatctac	cgattcatct	taaggcagca	540
ggaccagttt	gagtggcaac	aatgcagcag	cagaatcaat	ggaaacaaca	gaatgattgc	600
aatgtccttt	ttttctctct	gctcttgact	tgataaaagg	ggaccgt		647

<210> 309
 <211> 460
 <212> DNA
 <213> Homo sapien

<400> 309

acttttatagt	ttaggcttga	cattggaaa	aaaaaaaagc	cagaaccaaca	tgtgatagat	60
aattctgattg	gctgcacact	tccagactga	tgaatgatga	acgtgatgga	ctattgtatg	120
gaacacatct	tcagcaagag	ggggaataac	tcactatttt	tggccagcag	ttgtttgatc	180
acccaaacac	atgccagaat	actcagcaaa	ccttcttagc	tcttgagaag	tcaaaagtcg	240
ggggaaattta	ttcctggcaa	ttttaatttg	actccttatg	tgagagcagc	ggctaccacg	300
ctggggttgt	ggagcgaaac	cgtcactagt	ggacatgcag	tggcagagct	cctggtaacc	360
acctagggga	atcacacaggc	acatgtgtga	tgccaagcgt	gacaactgta	gcactcaaat	420
ttgtcttgtt	tttgtctttc	ggtgtgtaag	attcttaagt			460

<210> 310
 <211> 539
 <212> DNA
 <213> Homo sapien

```

<400> 310
acggggactta tcaaatataag atagggeaaag aagaaa ctg aaataattata ggcagaaactg      60
ctaaagggttt taaaatatgt caggatttggg agaaggcatg gataaaggaac aaagttcagt      120
taggaagagag aaacacagaa ggaagagagaca caataaaggt cattatgtat tctgtgagaa      180
gtcagacagt aagattttgtg ggaatgggt tggttttgtg tatggtatgt attttagcaa      240
taattctttat ggcagagaaa gctaaaatcc tttagcttgc gtgaatgatc acttgctgaa      300
ttcttcaagg taggcattgat gaaggagggt ttagaggaga cacagacaca atgaactgac      360
ctagatagaa agccttagta tactcagcta ggaatagtga ttctgagggc acactgtgac      420
atgattatgt cattacatgt atggtagtga tggggatgat aggaaggaag aacttatggc      480
atattttcac cccacaaaaa gtcagttaaa tactgggaca ctaaccatcc aggtcaaga      539

```

```

<210> 311
<211> 526
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(526)
<223> n = A, T, C or G

```

```

<400> 311
caaatattgag ccaattgacat agaattttac aaatcagaa gcttattctg gggccatttc      60
ttttgacgtt ttctctaaac tactaaagag gcctlaatga tccclaaatt atattatcta      120
catttaacgc atttaaaatg tgltcagcat gaatatattg ctacagggga agclaaataa      180
atleaacatg gaataaagat ttgtccttaa atataactta caagaagact ttgatatttg      240
tttttcacaa gtgaagcatt cttataaagt gtcataacct ttttggggaa actatgggaa      300
aaaatgggga aactctgaag ggttttaagt atcttacctg aagctacaga ctccataaac      360
tctctttaca gggagctcct gcagccccta cagaatagag tggctgagat tcttgattgc      420
acagcaagag ctctcctatc aaacccttc ctttttagt atctgtgtat caagtataaa      480
agttotataa actgtagtnc acttatttta atccccaaag cacagt      526

```

```

<210> 312
<211> 500
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(500)
<223> n = A, T, C or G

```

```

<400> 312
cctctctctc cccacccccct gactctagag aactgggttt tctccagta ctccagcaat      60
tcattttctg aagcagttga gccactttat tccaaagtac actgcagatg ttcaaactot      120
ccattttctc ttcccttcca cctgccagtt ttgctgactc tcaacttgto atgagtgtaa      180
gcattaaagg cattatgott cttogattot gaagacaggo cctgctcatg gatgactctg      240
gottcttagg aaaatatttt tottccaaa tcagtaggaa atctaaaact atccccctct      300
tgcagatgtc tgcagcttc agacatttgg tttagaacc atgggaaaaa aaaaaatoot      360
tgotaatgtg gtttcctttg taaccanqa ttcttatttg nctggtatag aatatcagct      420
ctgaacgtgt ggtaaagatt ttgtgtttg aatataggag aatcagttt gotgaaagat      480
tagttttaat tatctattgg

```

```

<210> 313
<211> 718
<212> DNA
<213> Homo sapien

<220>
<221> misc_feature
<222> (1)...(718)

```

<223> n - A, T, C or G

<400> 313

ggagatttgg	gtgggtttgca	gocgagggag	accaggaaga	tctgcatggt	gggaaggacc	60
tgatgataca	gaggtgagaa	ataagaaag	ctgctgactt	taccatctga	ggccacacat	120
ctgctgaaat	ggagataatt	aacatcacta	gaaacagcaa	gatgacaata	taatgtctaa	180
gtagtacat	gtttttgcac	atttccagcc	cttttaata	ccacacaca	caggagcac	240
aaaaggaagc	acagagatcc	ctgggagaaa	tgcccgcccg	ccatcttggg	tcctcgatga	300
gcctcgccct	gtgcctgntc	ccgcttgtga	gggaaggaca	ttagaaaatg	aattgatgtg	360
ttccttaaa	gatggcagga	aaacagatcc	tggtgtggat	atttatttga	acgggattac	420
agatttgaaa	tgaagtcaca	aagtgaagcat	tccaatgag	aggaaaacag	acgagaaaat	480
cttgatggtt	cacaagacat	gcaacaaaca	aantggaata	ctgtgatgac	acgagcagcc	540
aactggggag	gagataccac	ggggcagagg	tcaggattct	ggccctgctg	cctaactgtg	600
cgttatacca	atcatttcta	ttctaccct	caaacagct	gtngaatato	tgacttacgg	660
ttcttntggc	ccacatttcc	atnatecacc	ccctcttttt	aantttante	caaatgt	718

<210> 314

<211> 358

<212> DNA

<213> Homo sapien

<400> 314

gtttatttcc	attacagaaa	aaacatccag	acaatgtata	ctatttcaaa	tatatccata	60
cataatcaaa	tatagctgta	gtacatgttt	tcatttgggt	agattaccac	aaatgcagg	120
caacatgtgt	agatctcttg	tcttattctt	ttgtctataa	tactgtattg	tgtagtccaa	180
gctctcggt	gtccagccac	tgtgaaacat	gctcccttta	gattaacctc	gtggacgctc	240
ttgttgatt	gctgaactgt	agtgcctgt	attttgcttc	tgtctgtgaa	ttctgttct	300
tctggggcat	ttccttgtga	tgcagaggac	caccacacag	atgacagcaa	tctgaatt	358

<210> 315

<211> 341

<212> DNA

<213> Homo sapien

<400> 315

taccacctcc	ccgttggcac	tgatgagccg	catcaccatg	gtcaccagca	ccatgaaggc	60
atagggtgatg	atgaggacat	ggaatgggcc	ccccaggatg	gtctgtccaa	agaagcgagt	120
gacccccatt	ctgaagatgt	ctggaacctc	taccagcagg	atgatgatag	ccccaatgac	180
agtcaccagc	tcccgacca	gcggatatac	gtccttaggg	gtcatgtagg	cttccctgaag	240
tagcttctgc	tgttaagggg	tgttgcctcg	ggggctcgtg	cggttattgg	tccctgggctt	300
gagggggcgg	tagatgcagc	acatggtgaa	gcagatgatg	t		341

<210> 316

<211> 151

<212> DNA

<213> Homo sapien

<400> 316

aguctgggca	agactcttcc	gccccacact	gcaatttggg	cttgltgccc	tatccattta	60
tgtggggcct	tcctggatct	ctgatttata	accccaactg	agcgatgtgt	tgaclggact	120
catttcaggga	gctctggttg	caatactagt	t			151

<210> 317

<211> 151

<212> DNA

<213> Homo sapien

<400> 317

agaactagtg	gatcctaagt	aaatacctga	aacatatatt	ggcattttatc	aatggctcaa	60
atcttcattt	atctctggcc	ttaacctgg	ctcctgaggc	tggggccagc	agatcccagg	120
ccagggetct	gttcttgcca	caactgcttg	a			151

95

<210> 318
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 318
 actggtggga ggcgtgttt agttggctgt ttccagaggg gtctttcgga gggacctcct 60
 gctgcaggct ggagtgtctt tattcctggc qggagaccgc acattccact gctgaggctg 120
 tggggcggt ttatcaggca gtgataaaca t 151

<210> 319
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 319
 aactagtggg tccagagcta taggtacagt gtgatctcag ctttgcaaac acattttcta 60
 catagatagt actaggtatt aatagatatg taaagaaaga aatcacacca ttaataatgg 120
 taagattggg tttatgtgat tttagtgggt a 151

<210> 320
 <211> 150
 <212> DNA
 <213> Homo sapien

<400> 320
 aactagtggg tccactagtc cagtgtgggt gaattccatt gtgttgggt tctagatcgc 60
 gagcggctgc cctttttttt tttttttttg ggggggaatt tttttttttt atagattatt 120
 gagtgttcta cagcttcag taaataccat 150

<210> 321
 <211> 151
 <212> DNA
 <213> Homo sapien

<400> 321
 agcaactttg tttttcatcc aggttatatt aggcttagga ttctctctca cactgcagtt 60
 tagggtggca ttgtaccag ctatggcata ggtgttaacc aaaggctgag taaacatggg 120
 tgctctgag aatcaaagt ctccatacac t 151

<210> 322
 <211> 151
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature
 <222> (1)...(151)
 <223> n = A, T, C or G

<400> 322
 atccagcacc ttctctgtt tottgccctt cttttctctt ttcttasatt ctgcttgagg 60
 tttgggcttg gtcagtttgc cacagggtt ggagatgggt acagtcttct ggcattcggc 120
 attgtgcagg gctcgttcca nacttccagt t 151

<210> 323
 <211> 151
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc_feature

<222> (1)...(151)

<223> n = A, T, C or G

<400> 323

tgaggacttg	tktttttttt	ctttatttll	aatectctta	ckttgttaat	atattgccta	60
nagactcant	tactaccag	tttgtggtt	twtgaggaga	atgtaactgg	acagttagct	120
gttcaatyaa	aaagacactt	ancccatgkg	g			151

<210> 324

<211> 461

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1)...(461)

<223> n = A, T, C or G

<400> 324

acctgtgtgg	aatttcagct	ttcctcatgc	aaaaggattt	tgtatccccg	gcctacttga	60
agaagtgttc	agctaaagga	atccaggttg	ttgggttggac	tgtaataacc	tttgatgaaa	120
agagttacta	cgaateccat	cttgggttcca	gtatatacac	tgacagcatg	gtagaagact	180
gcgaacctca	cttctagact	ttcaagggttg	gacgaacagg	gttcagaaac	tgccaggggc	240
ctcatacagg	gatataaaaa	taccctttgt	gtaccccagg	ccctggggaa	tcaggtgact	300
cacacaaatg	caatagtttg	tcactgcatt	tttacctgaa	ccaaagctaa	accgggtgtt	360
gccaccatgc	accatggcat	gccagagttc	aaacatgttg	ctcttqaaaa	ttgggtctlg	420
aaaaacgcac	aagagccct	gccctgccct	agclgagaca	c		461

<210> 325

<211> 400

<212> DNA

<213> Homo sapien

<400> 325

acactgtttc	catgttatgt	ttctacacat	tgctacctca	gtgctcctgg	aaacttagct	60
tttgatgtct	ccaagtagtc	cacottcatt	taactctttg	aaactgtatc	atctttgcca	120
agtaagagtg	gtggcctatt	tcagctgctt	tgacaaaatg	actggctcct	gacttaacgt	180
ttcataaatg	aatgtgtctg	agcaaatgtc	ccatgtgtgg	ggcgaaagag	agaaaatctt	240
gttttgtttt	ggactctctg	tggtcccttc	caatgtgtgt	ggtttccaac	cagggggaagg	300
gtcccttttg	cattgccaag	tgccataacu	atgagcacla	cgtacacctg	gttctgccc	360
ctggccaaag	aggctggttt	gcaagcatga	aalqaatgat			400

<210> 326

<211> 1215

<212> DNA

<213> Homo sapien

<400> 326

ggaggactgc	agcccgcaact	cgcagccctg	gcaggcgcca	ctggtcattg	aaaacgaatt	60
gttctgtctg	ggcgtcctgg	tgcatccgca	gtgggtgctg	tcagccgcac	actgtttcca	120
gaactcctac	accatcgggc	tgggectgca	cagtccttgag	gccgaccaag	agccaggag	180
ccagatggtg	gaggccagcc	tctccgtacg	gcacccagag	tacaacagac	ccttgcctgc	240
taacgacctc	atgctcatca	agttggacga	atccgtgtcc	gagtctgaca	ccatccggag	300
catcagcatt	gcttcgcagt	gccctaccgc	ggggaactct	tgccctcgtt	ctggctgggg	360
tctgtctggc	aacggcagaa	tgccctaccgt	gctgcagtgc	gtgaacgtgt	cgggtggtgt	420
tgaggaggtc	tcagtaagc	tctatgaccc	gctgtaccac	cccagvatgt	tctgogccgg	480
cggaggggcaa	gaccagnagg	actcctgcaa	cgggtgactct	ggggggcccc	tgatctgcaa	540
cgggtacttg	cagggccttg	tgtctttcgg	aaagccccc	tgtggccaa	ttgcctgtcc	600
aggtgtctac	accaacctct	qcaaatte c	tgaglggata	gagaaaaacc	tccagggccg	660
ttactcttgg	ggactgggaa	ccvalqaaal	tgacccccaa	alacalcctg	cgggaaggaa	720
tcaggaaatat	ctgttcccgg	ccctctctcc	ctcaggccca	ggagtccagg	ccccccagcc	780
ctcctccctc	aaacccaagg	tacagatccc	cagcccttcc	tccctcagac	ccaggagtcc	840

97

```

agacccccca gccctcctc cctcagaccc aggagtcag cccctcctcc ctcaaaccca 900
ggagtcacaga cccccagacc cctcctccct cagacccagg ggtccaggcc cccacccct 960
cctccctcag actcagaggt ccaagccccc aacccctcct tccccagacc cagaggtcca 1020
ggtccagacc cctcctccct cagacccagg ggtccaatgc cactagact ctcctgtac 1080
acagtgcctc cttgtggcac gttgacccaa ccttacagt tggttttca tttttgtcc 1140
cttccctcta gatccagaaa taaagtctaa gagaagcgca aaaaaaaa aaaaaaaa 1200
aaaaaaaaa aaaa 1215

```

<210> 327
 <211> 220
 <212> PRT
 <213> Homo sapien

```

<400> 327
Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
1      5      10      15
Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
20     25     30
Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
35     40     45
Leu His Ser Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
50     55     60
Ala Ser Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu Leu Ala
65     70     75     80
Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
85     90     95
Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
100    105    110
Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
115    120    125
Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
130    135    140
Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
145    150    155    160
Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
165    170    175
Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
180    185    190
Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
195    200    205
Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser
210    215    220

```

<210> 328
 <211> 234
 <212> DNA
 <213> Homo sapien

```

<400> 328
cgctcgtctc tggtagctgc agccaaatca taaacggcga ggactgcagc ccgcactgc 60
agccctggca ggcggcactg gtcattgaaa acgaattgtt ctgctcgggc gtcctgggtgc 120
atccgcagtg ggtgctgtca gccacacact gttccagaa ctctacacc atcgggctgg 180
gctcgacag tcttgaggcc gaccaagagc caggagacca gatggtggag gcca 234

```

<210> 329
 <211> 77
 <212> PRT
 <213> Homo sapien

```

<400> 329
Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly Glu Asp Cys Ser
1      5      10      15

```

98

Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val M t Glu Asn Glu Leu
 20 25 30
 Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val Leu Ser Ala Thr
 35 40 45
 His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly Leu His Ser Leu
 50 55 60
 Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu Ala
 65 70 75

<210> 330
 <211> 70
 <212> DNA
 <213> Homo sapien

<400> 330
 cccacacacac tggcccgatc ccacccctga ctcgcgcctc aggcacgcctc gtctctggta 60
 gctgcagcca 70

<210> 331
 <211> 22
 <212> PRT
 <213> Homo sapien

<400> 331
 Gln His Asn Gly Pro Ile Pro Ser Leu Thr Pro Pro Ser Gly Ser Leu
 1 5 10 15
 Val Ser Gly Ser Cys Ser
 20

<210> 332
 <211> 2507
 <212> DNA
 <213> Homo sapien

<400> 332
 tgggtgcgcgt gcagccggca gagatgggtg agctcatgtt ccgcctgttg ctctctcttc 60
 tgcccttctct tctgtatctg gctgcgcgcc aaatcaggaa aatgctgtcc agtgggggtg 120
 gtacatcaac tgttcagctt cctgggaaag tagttgtggt cacaggagct aatacaggta 180
 tcgggaagga gacagccaaa gagctggctc agagaggagc tcgagtatat ttagcttgcc 240
 gggatgtgga aaagggggaa ttggtggcca aagagatcca gaccacgaca gggaaccagc 300
 aggtgttggt ggggaaactg gacctgtctg atactaagtc tattcgagct ttgtctazgg 360
 gcttcttagc tgaggaaaaq caccctccag ttttgatcaa caatgcaggg gtgatgatgt 420
 gtccgtactc qaagauagca gatqgctttg agatgcacat aggcgtcaac cacttgggtc 480
 acttctctct aacccalclq ctgctagaga aactaaggga alcagcccca tcaaggatag 540
 taactgtgtc ltcctctgca calccctgg gaggatcca ctccalaac ctgcaaggcg 600
 agaaattcta caatgcaggc ctggcctctt gtcacagcaa gctagcnaac atctcttca 660
 ccagggaact ggcccgga ga ctaaaaggct ctggcggtac gacgtattct glacaccctg 720
 gcacagtcce atctgaactg gttcggcact catctttcat gagatggatg tgggtggcttt 780
 tctcttttt catcaagact cctcagcagg gagccagac cagcctgcac tgtgctttaa 840
 cagaaggtct tgagattcta agtgggaatc atttcagtga ctgtcatgtg gcctgggtct 900
 ctgcccgaag tcgtaatgag actatagcaa ggcggctgtg ggacgtcagt tgtgacctgc 960
 tgggctctcc aatagactaa caggcagtg cagttggacc caagagaaga ctgcagcaga 1020
 ctacacagta ctctctgtca aaatgattct ccttcaagggt tttaaaaacc ttagcaciaa 1080
 agagagcaaa accttccagc cttgccctgct tgggtgtccag ttaaaactca gtgtactgcc 1140
 agatttgtct aaatgtctgt catgtccaga tttactttgc ttctgttact gccagagtta 1200
 cttagatat cataatagga taagaagacc ctcatatgac ctgcacagct cattttcctt 1260
 ctgaagaaa ctactacctt ggagaatcta agctatagca gggatgattt atgcaaat 1320
 gaactagctt ctittgttcc aattcagttc ctcccaacca accagttctt acttcaagag 1380
 ggccacactg caacctcagu ttacatgaa taacaaagac tggctcagga gcagggttg 1440
 ccaggcatg gtggalcaac ggaggtcagt agttcaagac cagcctggcc aacatgggtg 1500
 aacccacct ctactaaaa ttgtgtatat ctittgtgtg ctctctgttt atgtgtgcca 1560
 agggagtatt ttacaaagt tcaaaacagc cacaatnanc agagatggag caaaccagtg 1620

coatecagtc	tttatgcaca	tgaatgctg	cgaagggaag	cagattctgt	atatgttgg	1680
aactaccac	caagagcaca	tgggtagcag	ggaagaagta	aaaaagaga	aggagaatac	1740
tgaagataa	tgcacaaat	gaagggaacta	gttaaggatt	aactagccct	ttaaggatta	1800
actagttaa	gattaatagc	aaaagayatt	aantatgcta	acatagctat	ggagggaattg	1860
agggaagca	cccaggactg	atgaggtctt	aacaaaaacc	agtgtggcaa	aaaaaaaada	1920
aaaaaaaaa	aaaaatccta	aaaaaanaaa	aacaaaaaaa	acaattcttc	attcagaaaa	1980
atttatctag	ggactgatat	tggtaattat	ggtcaattta	ataatatttt	ggggcatttc	2040
cttacattgt	cttgacaaga	ttaaatgtc	tgtgccnaaa	ttttgtattt	tatttgagaa	2100
cttcttatca	aaagtaantgc	tgcacaagga	agtctaagga	attagtagtg	ttcccatcac	2160
ttgtttggag	tgtgctatct	taaaagattt	tgatttctct	gaatgacant	tatattttta	2220
ctttggtgg	ggaaagagtt	ataggaccac	agtcttcaat	tctgatactt	gtaaaltaal	2280
cttttattgc	acttctgttg	accatlaagc	tatatgttta	gaatgggtca	ttttacggaa	2340
aaattagaaa	aatctctgala	atagtgcaga	ataaatgaa	laatgtttta	cttaatttat	2400
attgaactgc	caatgcacaa	tcaaatctct	ttttgattat	ttttgttct	catctacnag	2460
aataaaaacg	caagaattaa	aagtrctgatl	acaaaaaaaa	baaaaaa		2507

<210> 333
 <211> 3030
 <212> DNA
 <213> Homo sapien

<400> 333						
gcaggcgact	tgcagctgg	gagcgattta	aaacgctttg	gattcccccg	gcctgggtgg	60
ggagagcgag	ctgggtgccc	cctagattcc	ccgccccgc	acctcatgag	cagacctcg	120
gctccatgga	gccccgcaat	tatgcaacct	tggatggagc	caaggatata	gaaggcttgc	180
tgggagcggg	agggggcggg	aatctggtcg	cccaactccc	tctgaccagc	cacccagcgg	240
cgccatagct	gatgcctgct	gtcaactatg	cccccttggg	tctgccaggc	tggcgaggag	300
cgcacaaagca	atgccaccca	tgccttgggg	tgcgccaggg	gaagtcccca	gctcccgtgc	360
cttatggtta	ctttggaggc	gggtactact	cctgcccagt	gtcccggagc	tgcctgaaac	420
cctgtgcccc	ggcagccacc	ctggccggct	accrcgcggg	gactccacag	gccggggag	480
agtaccacag	ycgccccact	gagtlctgct	tctatccggg	atatccggga	acctaccagc	540
clatggccag	ttaactggac	gtgtctgtgg	tgcagactct	gggtgctcct	ggagaaccgc	600
gacctgactc	ctgtttgccc	gtggacagtt	accagtcttg	ggctctcgct	gggtggctgga	660
acagccagat	gtgttgccag	ggagaaacaga	accacaccag	tcccttttgg	aaggcagcat	720
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<210> 334

<211> 2417

<212> DNA

<213> Homo sapien

<400> 334

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<210> 335

<211> 2984

<212> DNA

<213> Homo sapien

<400> 335

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<210> 336

<211> 147

<212> PRT

<213> Homo sapien

<400> 336

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102

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20           25           30
Pro Lys Gln Pro Gln Lys Arg Ser Arg Ala Ala Phe Ser His Thr Gln
35           40           45
Val Ile Glu Leu Glu Arg Lys Phe Ser His Gln Lys Tyr Leu Ser Ala
50           55           60
Pro Glu Arg Ala His Leu Ala Lys Asn Leu Lys Leu Thr Glu Thr Gln
65           70           75           80
Val Lys Ile Trp Phe Gln Asn Arg Arg Tyr Lys Thr Lys Arg Lys Gln
85           90           95
Leu Ser Ser Glu Leu Gly Asp Leu Glu Lys His Ser Ser Leu Pro Ala
100          105          110
Leu Lys Glu Glu Ala Phe Ser Arg Ala Ser Leu Val Ser Val Tyr Asn
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<210> 337
<211> 9
<212> PRT
<213> Homo sapien

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<210> 338
<211> 9
<212> PRT
<213> Homo sapien

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<400> 338
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<210> 339
<211> 318
<212> PRT
<213> Homo sapien

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<400> 339
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Cys Thr Ser Thr Val Gln Leu Pro Gly Lys Val Val Val Val Thr Gly
35           40           45
Ala Asn Thr Gly Ile Gly Lys Glu Thr Ala Lys Glu Leu Ala Gln Arg
50           55           60
Gly Ala Arg Val Tyr Leu Ala Cys Arg Asp Val Glu Lys Gly Glu Leu
65           70           75           80
Val Ala Lys Glu Ile Gln Thr Thr Thr Gly Asn Gln Gln Val Leu Val
85           90           95
Arg Lys Leu Asp Leu Ser Asp Thr Lys Ser Ile Arg Ala Phe Ala Lys
100          105          110
Gly Phe Leu Ala Glu Glu Lys His Leu His Val Leu Ile Asn Asn Ala
115          120          125
Gly Val Met Met Cys Pro Tyr Ser Lys Thr Ala Asp Gly Phe Glu Met

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	165	170
Ser Leu Ala His His Leu Gly Arg Ile His Phe His Asn Leu Gln Gly		175
	180	185
Glu Lys Phe Tyr Asn Ala Gly Leu Ala Tyr Cys His Ser Lys Leu Ala		190
	195	200
Asn Ile Leu Phe Thr Gln Glu Leu Ala Arg Arg Leu Lys Gly Ser Gly		205
	210	215
Val Thr Thr Tyr Ser Val His Pro Gly Thr Val Gln Ser Glu Leu Val		220
	225	230
Arg His Ser Ser Phe Met Arg Trp Met Trp Trp Leu Phe Ser Phe Phe		235
	245	250
Ile Lys Thr Pro Gln Gln Gly Ala Gln Thr Ser Leu His Cys Ala Leu		255
	260	265
Thr Glu Gly Leu Glu Ile Leu Ser Gly Asn His Phe Ser Asp Cys His		270
	275	280
Val Ala Trp Val Ser Ala Gln Ala Arg Asn Glu Thr Ile Ala Arg Arg		285
	290	295
Leu Trp Asp Val Ser Cys Asp Leu Leu Gly Leu Pro Ile Asp		300
305	310	315

<210> 340
 <211> 483
 <212> DNA
 <213> Homo sapien

<400> 340

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 <211> 344
 <212> DNA
 <213> Homo sapien

<400> 341

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<210> 342
 <211> 592
 <212> DNA
 <213> Homo sapien

<400> 342

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<210> 343

<211> 382

<212> DNA

<213> Homo sapien

<400> 343

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<210> 344

<211> 536

<212> DNA

<213> Homo sapien

<400> 344

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<210> 345

<211> 251

<212> DNA

<213> Homo sapien

<400> 345

accttttgag	gtctctctca	ccacctucaa	agccacccgc	accgtgggat	gtgctggatg	60
tgaatgaagc	ccccatcttt	gtgcclcccg	aaaagagagt	ggaagtgtcc	gaggactttg	120
gcgtgggcca	ggaaalcaaa	tcclacactg	cccaggagcc	agacacattt	atggaacaga	180
aaataacata	lccgaattgg	agggacactg	ccaactggct	ggagattaat	ccggacactg	240
gtgcacattc	c					251

<210> 346

<211> 282

<212> DNA

<213> Homo sapien

<220>

<221> misc_feature

<222> (1)...(282)

<223> n = A,T,C or G

<400> 346

cgctctctg	acactgtgat	catgacaggg	gttcaaacag	aaagtgcctg	ggccctcctt	60
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ctaagtcttg	ttaccsaaa	aaggasaaag	aaaagatctt	ctcagttaca	aattctggga	120
agggagacba	tacctgggtc	ttgccctaag	tgagagggtct	tccctccgc	accasaaaat	180
agaaaggctt	tctatttcac	tgccccaggt	agggggaagg	agagtaactt	tgagtcgtg	240
ggtctcattt	ccccagggtg	cttcaatgct	catnaaacc	aa		282

<210> 347

<211> 201

<212> DNA

<213> Homo sapien

<220>

<221> misc feature

<222> (1) ... (201)

<223> n = A, T, C or G

<400> 347

acacacataa	tattataaaa	tgccatctaa	ttggaaggag	ctttctatca	ttgcaagtca	60
taaataaac	ttttaaaaa	ntactancag	cttttaccta	ngctcctaaa	tgcttgtaaa	120
tctgagactg	actggaccca	cccagaccca	gggcaaagat	acatgttacc	atatcatctt	180
tataaagaat	ttttttttgt	c				201

<210> 348

<211> 251

<212> DNA

<213> Homo sapien

<400> 348

ctgttaataa	caacatttct	gcataacttg	tgccaagtga	gaaaatgttc	taaaatcaca	60
agagagaaac	gtgccaagaat	gaaactgacc	ctaagtccca	ggtgcccttg	ggcaggcaga	120
aggagacact	cccagcatgg	aggagggttt	atcttttcat	cctaggtcag	gtctacaatg	180
ggggaagggt	ttattataga	actcccaaca	gcccacactca	ctcctgccc	cccccagatg	240
gccctgcttc	c					251

<210> 349

<211> 251

<212> DNA

<213> Homo sapien

<400> 349

tassaalcaa	gccatttaat	tgatctcttg	aggttaaa	atatatggga	gctggatcac	60
aacccctggg	gtgccaagag	ctatgggtcc	agaacatggg	gtgggtattat	caacagagtt	120
cagaagggtc	tgaactctac	gtgttaccag	agaacataat	gcaattcatg	cattccactt	180
agcaattttg	taaaatacca	gaaacagacc	ccaagagtct	ttcaagatga	ggaaaattca	240
actcctggtt	t					251

<210> 350

<211> 908

<212> DNA

<213> Homo sapien

<400> 350

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agcccgcccg	gtgaagctcg	ctgctttccc	tacctcctta	agtgaatgac	aaacgcccac	120
cggctggant	tgctctggtt	atgatgacag	agaaatgat	ctcttccctt	gtgacaccaa	180
caactgtaaa	tttgatgggg	uatgttlaag	aattggagac	arigtgactt	gctctgttca	240
gttcaagtgc	aacaatgact	atgtccctgt	gtgtgggtcc	aatggggaga	gctaccaga	300
tgagtgttac	ctgcagacag	ctgcctgcaa	acagccagag	gagatacttg	tggtgtcaga	360
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ctgtgatatt	tgcaggtttg	gtgcagaaatg	tgacgaagat	gccgaggatg	tctggtgtgt	480
gtgtaatatt	gautgttctc	aaacccaaat	caatccccct	tgcgcttctg	atgggaaatc	540
ttatgataal	gcattgcaaa	tcaagaagac	atcgtgtcag	aaacaggaga	aaattgaagt	600
catgtctttg	ggtcgatgtc	aagataaacac	aactacaact	actaagtctg	aagatgggca	660

106

ttatgcaaga	acagattatg	cagaguatgc	taacaaatta	gaagaagtg	ccagagaaac	720
ccacatacct	tgtccggaac	attacaatgg	cttctgcacg	catgggaagc	gtgagccttc	780
tatcaatattg	caggagccat	cttgcagggtg	tgatgctggg	tatactggac	aaccctgtga	840
aaaaaaggac	tacagtgttc	tatacgttgt	tcccggctct	gtacgalttc	agtatgtctt	900
aatgcag						908

<210> 351
 <211> 472
 <212> DNA
 <213> Homo sapien

<400> 351						
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gtcacaacct	aatgcccttg	ttattgtgaa	ttaggattaa	gtagtaattt	tcaaaattca	120
catttaacttg	attttanaat	cagwttttgyg	agtcatttac	cacaagctaa	atgtgtacac	180
tatgataaaa	acaaacattg	tattcctgtt	tttctaaca	gtcctaattt	ctaacaactgt	240
atatacctt	cgacatcaat	gacctttgtt	ttcttttact	ccagtaataa	agtaggcaca	300
gatctgtcca	caacaaactt	gccctctcat	gccttgcttc	tcaccatgct	ctgctccagg	360
tcagccccc	tttggcctgt	ttgttttgtc	aaaaacctaa	tctgcttctt	gcttttcttg	420
gtaatatata	tttaggggaag	atgtttgctt	gcccacacac	gaagcaaagt	aa	472

<210> 352
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 352						
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naggctgcgt	tccgtcctta	ngalgaagac	cacgatgcag	tttccaaaca	ttggccactac	180
ctacatggaa	aggagggggg	agccaaccca	gaaatgggct	ttctctaatc	ctgggatacc	240
aataagcaca	a					251

<210> 353
 <211> 436
 <212> DNA
 <213> Homo sapien

<400> 353						
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cacattatgg	tattattact	atactgatta	tatttatcat	gtgacttcta	atlaraaaaat	120
gtatccaaau	gcaaaacagc	agatataca	aallaaagag	ccagaagata	gacettaaac	180
gataaggcaa	cttatacatt	gacaaacca	atccaataca	tttaaacctt	tcgggaalga	240
gggggacaaa	tgggaagca	atcaaatctg	tgtaaaacta	ttcaglatgt	ttccttctgt	300
tcattgtctg	raaggccttc	ccttcaatgg	ggatgacaaa	clccaatgc	cacacaaatg	360
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gggctcctaa	tgtagt					436

<210> 354
 <211> 854
 <212> DNA
 <213> Homo sapien

<400> 354						
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caagtctgaa	accaaatcta	ggaaacatag	gaaacgagcc	aggcacaggg	ctgggtgggc	120
atcagggaac	acccttttgg	ttgatatttt	gcttaatctg	catcttttga	gtaagatcat	180
ctggcagtag	aagctgttct	ccaggtacat	ttctctagct	catgtacaaa	aacatcctga	240
aggactttgt	caggtgcctt	gctaaaagcc	agatgcgttc	ggcacttctt	tggtctgagg	300
ttaatggcac	acctacagga	actgggctca	tgctttcaag	tattttgtcc	tcactttagg	360
gtgagtga	gatccccatt	ataggagcac	ttgggagaga	tcataataaa	ctgactctt	420
gagtacatgc	agtaatgggg	tagatutgtg	tgggtgtgtct	tcattcctgc	aagggtgctt	480

gttagggagt	gtttccagga	ggaacaagtc	tgaabccaat	catgaaataa	atggtaggtg	540
tgaactggaa	aactaattca	aaagagagat	cgtgatataa	gtgtggttga	tacaccttgg	600
caatatggaa	ggctctaaat	tgccatatt	tgaataata	atcagcttt	ttgtatataa	660
aaataacaaa	ggattgagaa	tcattggtgc	taattgtata	aaagaccag	aaacataaat	720
atatcaactg	cataaatgta	aaatgcatgt	gaccaagaa	ggcccaaa	tggcagacaa	780
catgttaacc	attttccctt	ccaaaatgtg	agcggcgggc	ctgctgcttt	caaggctgtc	840
acacgggatg	tcag					854

<210> 355
 <211> 676
 <212> DNA
 <213> Homo sapien

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cagggtuaag	ctgatctttc	tggaaatgtc	ccaaccaagg	gcctatattt	atcaaaagcc	120
atccacaagt	cataccctgg	tgtcagcgaa	gagggcacgg	aggcagcagc	agccactggg	180
gacagcatcg	ctgtaaaaag	cctaccaatg	agagctcagt	tcaaggcgaa	ccaccccttc	240
ctgttcttta	taaggcacac	tcataccaac	acgatccat	tctgtggcaa	gottgcctct	300
ccctaactcg	alagggttga	gtaaaggtca	gagttgcaga	tgagggtcag	agacaatcct	360
gtgaccltcc	cacggccaaa	aaagctgtca	cacutcaagc	acctctgtgc	ctcagtttgc	420
tcatctgcaa	aataggtcta	ggatttcttc	caaccatttc	atgagttgtg	aaactaaggg	480
tttgtaatac	atggaaaaag	gtagacttat	gcagaaagcc	tttctggctt	tcttatctgt	540
ggtgtctcat	ttgagtgtctg	tccagtgaac	tgatcaagtc	aalyaqttaa	attttaaggg	600
attagatttt	cttgacttgt	atgtatctgt	gagatcttga	ataagtgaac	tgaactctct	660
gcttaaaagaa	aaccag					676

<210> 356
 <211> 574
 <212> DNA
 <213> Homo sapien

tctttttttt	tttttccagg	aaacattctc	ttactttatt	tgcattctcag	caaaggttct	60
catgtggcac	ctgactggca	tcaaaacaaa	gttcgttagc	caacaaagat	gggocactca	120
caagcttccc	atttgtagct	ctcagtgcc	ctgagttctc	gacacctgtt	cctctcttca	180
gtctcttagg	gaggcttaaa	tctgtctcag	gtgtgctaa	agtgcacagc	caaggkgttc	240
aaaagtccac	aaaactgcag	tctttgctgg	gatagttaag	caagcagtc	ctggacagca	300
gagttctttt	cttgggcaac	agataaccag	acaggactct	aatcgtgctc	ttatttcaaa	360
ttcttctgtc	tctgcctaga	ctggaataaa	aagccaatct	ctctcgtggc	acagggaaag	420
agatacaagc	tgtttfacat	gtgatagatc	taacaaaggc	atctaccgaa	gtctggtctg	480
gatagacggc	acaggagct	cttaggtcag	cgtgctggt	tggaggacac	tcttgagtc	540
agctttgcag	cctttgtgca	acagtacttt	ccca			574

<210> 357
 <211> 393
 <212> DNA
 <213> Homo sapien

tttttttttt	tttttttttt	tttttttttt	tacagantat	aratgcttta	toactglaot	60
taatatggkg	ktttgttcac	tatacttcaa	aatgcaccaa	tataaatat	ttaattcagc	120
aaagcccaac	caaracttga	ttttatcaac	aaauacccct	aaatataaac	ggsaaaaaag	180
atagatctaa	ttactccagt	tttttttaaa	cttaaaarat	attccattgc	ogaattaaara	240
eraarataag	tgttatatgg	aaagaagggc	allcaagcac	actaaaraaa	cctgaggkaa	300
gcataactctg	tacaaaatta	aactgtcctt	tttggcatlt	taacaaatit	gcaacgktct	360
tttttttttt	ttttctgttt	tttttttttt	tac			393

<210> 358
 <211> 630
 <212> DNA
 <213> Homo sapien

<400> 358

acagggttaa	caggaggatc	cttgctctca	cggagcttac	attctagcag	gaggacaata	60
ttatgttta	taggaaaatg	atgagtttat	gacaaaggea	gtagatagt	ttttacaaga	120
gcataagata	gggaagctaa	tccagcacag	ggaggtcaca	gagcatccc	taaggaaagt	180
gagtttaaac	tgaagagagc	aagtgtctaa	actgaaggat	gtgttgaa	agaagggaqa	240
gtagaacaa	ttgggcagag	ggsacccttat	agaccctaag	gtgggaaggt	tcaaagaact	300
gaaagagagc	tageaacagct	ggagccgttc	tccggtgtaa	agaggagtca	aagagataag	360
attasagatg	tgaagattaa	gatcttgggt	gcattcagg	attggcactt	ctacaagaaa	420
tcactgaagg	gagtaatgtg	acattacttt	tcacttcagg	atggccattc	taactccagg	480
gggtagactg	gactaggtaa	gactggaggc	aggtagacct	cttctaaggc	ctgcgatagt	540
gaaagacaaa	aataagtggg	gaaattcagg	ggatagtga	aatcagtagg	acttaatatg	600
caagccagag	gttcctccac	aacaaccagt				630

<210> 359

<211> 620

<212> DNA

<213> Homo sapien

<400> 359

acagcattcc	aaatatata	tctagaguct	aarrgtaaat	gctctatagt	gaagaagtaa	60
taattaaaa	atgctactaa	tatagaaaat	ttataatcag	aaaaataaat	attcagggag	120
ctcaccagaa	gaataaagt	ctctgccagt	tattaaagga	ttactgctgg	tgatttaaat	180
atgguatccc	ccaaaggaac	tggagagall	cttctggatt	algttcaata	tttatttcac	240
aggatlaact	gttttaggaa	caqatataaa	gcttggccac	qgaagagatg	gacaaagcac	300
aaagacaaaca	tgatecctta	ggaagcaaca	ctaccctttc	aggaataaaa	tttggagaaa	360
tgcacacatta	tgcttctgta	ataalctgta	gaaagaaagt	ctgatgaaa	tgacatcctt	420
aattgaagat	aactttataa	gaattctggg	tcaaatataa	ctctttgaag	aaascctcca	480
aattgtcattg	acttatcaaa	tactatcttg	gcataataac	tatgaaggca	aaactaaca	540
aacaaaaagc	tcacaccaaa	caaaaccatc	aacttatitt	gtattctata	acatacgaga	600
ctgtaaaagt	gtgacagtgt					620

<210> 360

<211> 431

<212> DNA

<213> Homo sapien

<400> 360

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lgatgaatga	tgaacgtgat	ggactattgt	atggagacaa	tcttcagcaa	gagggggaaa	120
tactcatcat	ttttggccag	cagtgtgttg	atcaccaaac	atcatgccag	aatactcagc	180
aaaccttctt	agctcttgag	aagtcaaat	ccgggggaat	ttattcctgg	caattttaat	240
tggactcctt	atgtgagagc	agcggctacc	cagctggggt	gggtggagca	acccgtcact	300
agtggacatg	cagtggcaga	gctcctggta	accacctaga	ggaatacaca	ggcacatgtg	360
tgatgcaag	cgtgacacct	gtagcactca	aatttgcctt	gtttttgtct	ttcgggtgtgt	420
agattcttag	t					431

<210> 361

<211> 351

<212> DNA

<213> Homo sapien

<400> 361

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ttgggtctct	tggtctcttg	ccaagtcttc	caqccactcg	agggagaaat	atcgggaggt	180
ttgacttctt	ccggggcttt	ccggaggggt	tcacagtgaq	acctgagggc	ctcagggctg	240
caatcttgga	ltcaatgttl	gaacccctgc	telctgcttg	ctggacttct	qagggcgtca	300
ctgcacactt	gtcctccagc	lctgaacagct	cctcatclgt	ggctcctgtg	t	351

<210> 362

<211> 463

<212> DNA
<213> Homo sapien

<400> 362
acttcacacg gccataatgg gtgcctcccg tgagaatcca agcacctttg gactgcgcga 60
tctagatgag ccggtgaag atcttgccga tgcgcggctt cagggcgaag ttcttgccgc 120
ccccggtcac agaatgacc aggttggtg ttttcagggt ccagtgtctg gtcagcagct 180
cgtaaaggat ttccgcgtcc gtgtcgccgg acagacgtat ataactccct ttcttcccca 240
gtgtctcaca ctgaatatcc ccaaggcggt cggtaggaaa ttcccttggtg tgtttcttgt 300
agtccattt ctcaatttgg ttgatctggg tgccctccat gtgtgtggtc tgggcatagc 360
cacacttgca cacattctcc ctgataagca cgtatgtgtg gacagggaag aaggatttca 420
ttgagccctgc ttatggaaac tggatttgtt agcttaata gac 463

<210> 363
<211> 653
<212> DNA
<213> Homo sapien

<220>
<221> misc feature
<222> (1) ... [653]
<223> n = A,T,C or G

<400> 363
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ctcltqngga tcttggtgga catcttcatg aatggcaacc gtgccagwga ggctgtctc 120
tgggagggcc tccgcaagat gggactgcgt cctgggggtga gacatccctt ccttgagat 180
ctaacgaacc ttctcaccta tgagttgtaa agcagaaata cctgnactac agacgagtgc 240
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ggctctgaca gtccatggag gctgcagatg aggccttqga tgcctctggat gctyctgcag 420
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atcttgagga tcnttggctc agantccat ttccctctct ggcacagatc ccccgaaatg 600
cccgtccag attccctcag acctttgccc glocallat tggctctggt ggt 653

<210> 364
<211> 401
<212> DNA
<213> Homo sapien

<400> 364
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aaaacaaggt ggatagatct agaattgtaa cattttaaga aacccatagc atttgacaga 180
tgagaaagct caattataga tgcagaagta taactaaact uctatagtat taaagaaata 240
catttcacac ccttcataata anttcaatat cttggcttga ggcactccat acaatgtatc 300
acgtgcatag taaatcttta tatttgctat ggcgttgcac tagaggactt ggaactgcac 360
aagtggatgc ggggaaantg aatctcttct ccatagccca g 401

<210> 365
<211> 356
<212> DNA
<213> Homo sapien

<400> 365
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tccagagcca tcaagtctct gcagcaggtc attcttgggt aaagaaatga ctccacaaa 180
ctctccatcc cctggctttg gcttcggcct tgggttttcg gcatcatctc cgttaaatgt 240
gactgtccag atgtgtatag tacagtttga caagcctggg tccatacaga ccgctggaga 300
acattcggca atgtccctt ttagccagc ttcttctctg agctcccgga gagcag 356

110

<210> 366
 <211> 1851
 <212> DNA
 <213> Homo sapien

<400> 366

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tcacttctct	taagcciktg	tgaactcttcc	tctgatgtca	gctttaagtc	ttgttctgga	180
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tgattaaaaa	tttcaccact	tgcctgtttt	gctcatgtat	accaagtagc	agtgggtgtg	480
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atttatcttc	attgtagaca	gcatagtgta	gagtgggtatt	tccatactca	tctggaatat	600
ttgtctcagt	gocattgttc	agcaacatta	acgcacattc	atcttccctg	cattgtacgg	660
cccttgtcag	agctgtcttc	tttttgttgt	caaggacatt	aagttgacat	cgtctgtcca	720
gcacgagttt	tactacttct	gaattcccat	tggcagagge	cagatgtaga	gcagtcctct	780
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ggactttacc	ccaccaggca	gctctgttga	gcttgtccag	atcttctcca	tggacgttgt	900
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cgttcccttg	cagcagggga	agcagtgcca	gcaccacttg	cacctcttgc	tcccaaggct	1020
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gtccatccag	ggaggaagaa	atgcaggaaa	tgaagagatg	atgcacgatg	gtatactcct	1140
cagccatcaa	acttctggac	agcaggtcac	ttccagcaag	gtggagaaag	ctgtccaccc	1200
acagaggatg	agatccagaa	accacaatat	ccattcccaa	acaaacactt	ttcagccaga	1260
cacaggtaact	gaaatcatgt	catctgcggc	aacatggtgg	aacctacca	atcacacatc	1320
aagagatgaa	gacactgcag	tatatctgca	caacgttaata	ctcttcatcc	ataacaaaat	1380
aatataattt	tcctctggag	ccatctggat	gaactatgaa	ggaagaactc	cccgaagaag	1440
ccagtgcgag	agaagccaca	ctgaagctct	gtcctcagcc	atcagcgcca	oggacaggat	1500
tgtgtttctt	ccccagtgat	gcagcctcaa	gttatccoga	agctgcgcga	gcacacggty	1560
gctcctgaga	aucaccccag	ctcttcgggt	ctaacacagg	caagtcaata	aatgtgataa	1620
tcacataaac	agaattuaaa	gcaaaagtca	ataugcatct	caacagacac	agaaaaggca	1680
tttgacaaaa	tccagcatcc	llqatattat	tgttgcaatt	ctcagaggaa	atgctttctaa	1740
cttttccccc	tttqglatta	tgttggtctc	gggcttctca	taggttggtt	ttattacctt	1800
aaggtctgtc	ccttctatgc	ctgttttgc	gagggtttca	atctcctg	c	1851

<210> 367
 <211> 668
 <212> DNA
 <213> Homo sapien

<400> 367

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ttcagtatct	tgaagataaa	atttgttagat	ctataccttg	ttttttgatt	cgatatcagc	120
acortataag	agcagtgcct	tggccattaa	tttatctttc	attttagaca	gcrtagtgya	180
gagtgggtatt	tccatactua	tctggaatat	ttggatcagt	gcoatgttcc	agcaacatta	240
acgcacattc	atcttccctg	cattgtacgg	ctgttcagta	ttagacccaa	aaacaaatta	300
catatcttag	qaattccaaa	taacatlcca	uagctttcac	caactagtta	tatttaagg	360
agaaaactca	tttttalqcc	atgtattgaa	atcaaacucca	cctcatgctg	atatagttag	420
ctactgcata	cctttatcag	agclgtcttc	tttttgttyt	caaggacatt	aagttgacat	480
cgtctgtcca	gcaggaqltt	laactactol	qaattcccat	tggcagaggc	cagatgtaga	540
gcagtcctct	qagagtggga	agaclltlla	ggaaaltgta	gtgcactagc	tucagccata	600
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aaabaaaaa						668

<210> 368
 <211> 1512
 <212> DNA
 <213> Homo sapien

<400> 368

gggtcgccca	gggggsgcgt	gggctttcct	cgggtgggtg	tgggttttcc	ctgggtgggg	60
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ttcaaacaga	ttggaaaccc	ggagltacot	gctagtgggt	gaaactgggt	ggtagacgcg	180
atctgttggc	tactactggc	ttctcctggc	tgttaaaagc	agatggtggt	tgaggttgat	240
tccatgcggg	ctgctttctt	tgtaaggaag	ccatttgggt	tcaggagcaa	gatgggcaa	300
tgggtgctgc	gttgcttccc	ctgctgcagg	gagagcgcca	agagcaccgt	gggcaattct	360
ggagaccacg	acgtctctgc	tgtaagaca	ctcaggagca	agatgggcaa	gtggtgccgc	420
cactgcttcc	ccgctgctgc	ggggagtggt	aagagcaacg	tgggcgcttc	tggagaccac	480
gacgagtclq	ctatgaagac	actcaggaac	aagatgggca	agtgtgctg	ccactgcttc	540
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gccttcatgg	agccraggta	ccacgtccgt	ggagaagatc	tggacaagct	ccacagagct	660
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ttttttcccc	taataaatgt	aagatggcaa	aatttgcctt	gaatatgggt	ttacatgaaa	1380
actccaagaa	aagttaaaac	tgtttcagtg	aatagagatc	ctgctccttt	ggcaagttcc	1440
taaaaaacag	taatagatac	gaggtagatg	gcctgtcagt	ggcaaggttt	aaqatatctc	1500
tgatctcgtg	cc					1512

<210> 369

<211> 1853

<212> DNA

<213> Homo sapien

<400> 369

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tgggtcgggc	trgaatcccc	tgctggggtt	ggcaggtttt	ggctgggatt	gacttttytc	120
ttcaaacaga	ttggaaaccc	ggagltacot	gctagtgggt	gaaactgggt	ggtagacgcg	180
atctgttggc	tactactggc	ttctcctggc	tgttaaaagc	agatggtggt	tgaggttgat	240
tccatgcggg	ctgctttctt	tgtaaggaag	ccatttgggt	tcaggagcaa	gatgggcaa	300
tgggtgctgc	gttgcttccc	ctgctgcagg	gagagcgcca	agagcaccgt	gggcaattct	360
ggagaccacg	acgactctgc	tatgaagaca	ctcaggagca	agatgggcaa	gtggtgccgc	420
cactgcttcc	ccgctgctgc	ggggagtggt	aagagcaacg	tgggcgcttc	tggagaccac	480
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gccttcatgg	agccraggta	ccacgtccrt	ggagaagatc	tggacaagct	ccacagagct	660
gcctgggtgg	gtaaaagtccc	cagaaaaggt	ctcatcgcca	tgctcaggga	cackgaygtg	720
accaagargg	acaaagcaaaa	gaggactgct	ctacatctgg	cctctgccaa	tgggaattca	780
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gaacatggca	ctgatccaaa	tattccagat	gagtatggaa	ataccactct	rcactaygct	960
rtctayaatg	aagataaatt	aatggccaaa	gcactgctct	tataygggtg	tgatatcgaa	1020
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gtagtgaat	ttttaatya	gaaaaaagcg	aattttaa	gcrcctggat	gatatggag	1140
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gcaaaatrct	gatgtatctt	ctcaagatct	ggaaagacgg	ccagagagta	tgtgttctt	1260
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cctatgagac	taggctttga	gantcaataq	attctttttt	taaggaatct	tgggtaggga	1560
gagggtgtct	acgcctgtaa	ttccagcacc	tggagagct	gaugtgggca	gctcacgaga	1620

112

tcaggagatc	gagaccatcc	tggctaacac	ggtgaaaccc	catctctact	aaaaatataa	1680
aaacttagct	gggtgtgglt	gcgggtgccl	gtagtccca	ctactcagga	rgctgaggca	1740
ggagaatggc	atgaacccgg	gagggtgggg	ttgcagtgag	ccgagatccg	ccactacact	1800
ccagcctggg	tgacagagca	agactctgtc	tcacacacac	aaaaacacac	aaa	1853

<210> 370
 <211> 2184
 <212> DNA
 <213> Homo sapien

<400> 370

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aaaaccaccc	atgacaagcc	cacagccaac	ataatactaa	atgggggaaa	gttagaagca	120
tttccctctga	gaactgcaac	aataaatata	aggatgctgg	attttgtcaa	atgccttttc	180
tgtgtctgtt	gagatgctta	tgtgactttg	cttttaattc	tgtttatgtg	attatcacat	240
ttattgactt	gcctgtgtta	gaccgggaaga	gctgggggtgt	ttctcaggag	ccaccgtgtg	300
ctgcggcagc	ttcgggataa	cttgaggctg	catcactggg	gaagaaaacac	aytccgtgtc	360
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tggatgaaga	gtattacgtt	gtgcagatat	actgcagtgt	cttcactctc	tgatgtgtga	540
ttgggtaggt	tcacccatgt	tgccgcagat	gacatgattt	cagtacctgt	gtctggctga	600
aaagtgtttg	tttgtgaatg	gatattgtgg	tttctggatc	tcactcctct	tgggtggaca	660
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ctctacatct	ggcctctgac	aattgggaatt	cagaaglagt	aaaactcglg	ctggacagac	1140
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ttclgactac	aaagaaaaac	agatgltaaa	aactctctct	gaaacagca	atccagaaac	1680
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tgtagtccca	gctactcagg	argctgaggc	aggagaatgg	catgaacccg	ggaggtggag	2100
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ctcaaaaaaa	aaaaaaaaaa	aaaa				2184

<210> 371
 <211> 1855
 <212> DNA
 <213> Homo sapien

<220>
 <221> misc feature
 <222> {1}..(1855)
 <223> n = A,T,C or G

<400> 371

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cacgagcagc	ttgcacgcgc	ggcagcggtc	tgagcagcct	gtacacggct	gcaugcgac	120

gocgcccccg	cataacocgc	agactggcct	gtaacggctt	gcaggcgac	gocgocagcg	180
cgtaacggct	tygctgocct	gtaacggctt	gcacgtgcac	gctgcaocgc	cgttaacggc	240
ttggctggca	tgtagocgc	tggtttggct	ttgcattyt	tgtkggctk	ggcgttgkty	300
tcttggttg	acgcttcctc	cttgatkgc	cgtttccct	ttggatkgac	gtttcctyty	360
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gggcttgggc	tttccccggg	tgggttgggg	ttttcctggg	gtgggttggg	ctgtgctggg	540
atccccctgc	tgggttgggc	agggattgac	ttttttcttc	aaacagattg	gaaacccgga	600
gtaacntgct	agttgggtgaa	actggttggg	agacgcgac	tgtgtgtact	actgtttctc	660
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agaaguccatt	tggctcagc	agcaagatgg	gcaagtgggt	cgcactgct	tccccctgct	780
caggggggagc	ggcaagagca	acgltgggac	ttctggagac	ccccccgact	cctctgtgaa	840
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cggccagagc	aaagtggkcg	cttggggagg	ctccgclgac	agcggcttca	tggakccccg	960
gtaccacgtc	cttggggagg	atctggacaa	gctccacaga	gclgcttggg	gggglaaagt	1020
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ggccgtacaa	tgccagggaag	atgaatgtgc	gttaatgttg	ctggaacatg	gcactgtacc	1260
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gatctactaa	ttttatcttc	aaaatactga	aatgcattca	ttttaacatt	gacgtgtgta	1440
agggccagtc	ttccgtattt	ggaagctcaa	gcataacttg	aatgaaaata	ttttgaaatg	1500
acctaattat	ctaagacttt	atttttaata	ttgttatitt	caaagaagca	ttagagggtg	1560
cagttttttt	tttttaaatg	caottctggg	aaataacttt	gttgaaaaca	ctgaatttgt	1620
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tgtaaagtgg	caaaatttgc	cctgaaatag	gttttacatg	aaaactccaa	gaaagtttaa	1740
acatgtttca	gtgaatagag	atcctgctcc	tttggcaagt	tccctaaaaa	cagtaataga	1800
tacgaggtga	tgcgcctgtc	agtggcaagg	tttaagatat	ttctgatctc	gtgcc	1855

<210> 372
 <211> 1059
 <212> DNA
 <213> Homo sapien

<400> 372						
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ggtgcaagtg	gtgctgcccc	ctgcttcccc	tgtgpcagg	gagcggcaag	agcaacgttg	120
gcgcttgrgg	agactmogat	gacagygcct	tcatggagcc	caggtaccac	gtccgtggag	180
aagatctgga	caagctccac	agagctgccc	tgttgggtga	aagtccccag	aaaggatctc	240
atcgtcatgc	tcagggacac	tgaygtgaac	aagargyaca	agcaaaaagag	gactgctcta	300
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caacttaatg	tccttgacaa	caaaaagagg	avagctctga	yaaaggccgt	acaatgccag	420
gaagatgaat	gtggtttaat	gttgcctyga	catggcactg	atccaaatat	tucagctgan	480
tatygaaata	ccactctruv	ctaygccttc	tayaatgaag	ataaettvat	ggccaaagca	540
ctgctcttal	ayggtgctga	lclcgaaatca	aaaaacaaag	tatagatcta	ctaattttct	600
cttcaaaata	ctgaastgca	ttcattttta	cattgarctg	tgtaaaggcc	agtcttccgt	660
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ctttattttta	aatattgtta	ttttcaaaag	agcattagag	ggtacagttt	ttttttttta	780
aatgcaatttc	tggtaaatat	ttttgttgaa	aacactgaat	ttgtaaaagg	taatacttac	840
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ttgccctgaa	ataggtttta	catgaaaact	ccaagaaaag	ttaaacatgt	ttcagtgaat	960
agagatccctg	ctcctttggc	agtttcttaa	aaaacagtaa	tagatacag	gtgatgcgc	1020
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<210> 373
 <211> 1155
 <212> DNA
 <213> Homo sapien

<400> 373						
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atgggcaagt	ggtgccgcca	ctgcttcccc	tgtgcagggg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcagggaacaa	gatgggcaag	300
tgtgtctgoc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	gggocgttgg	360
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catgagcaaa	aacagcaagt	cgtgaaattt	ttaatcaaga	aaanaagcgaa	tttaaatgca	900
ctggatagat	atggaaggac	tgtctctata	cttgcctgat	gttgctggctc	agcaagtata	960
gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
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accagaaata	ataaa					1155

<210> 374
 <211> 2000
 <212> DNA
 <213> Homo sapien

<400> 374						
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aggagcaaga	tyggcaagtg	gtgctgcoct	tgtttccctt	gctgcaggga	gagoggcaag	120
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atgggcaagt	ggtgccgcca	ctgcttcccc	tgctgcaggg	ggagtggcaa	gagcaacgtg	240
ggcgcttctg	gagaccacga	cgactctgct	atgaagacac	tcagggaacaa	gatgggcaag	300
tgtgtctgoc	actgcttccc	ctgctgcagg	gggagcggca	agagcaagggt	gggocgttgg	360
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gtccttgaca	acaaaaagag	gacagctctg	ataaaggccg	tacaatgcc	ggaagatgaa	660
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gtcagccttc	tacttgagca	aaatattgat	gtatcttctc	aagatctatc	tggacagacg	1020
gccagagagt	atgctgtttc	tagtcatcat	catgtaattt	gccagttact	ttctgactac	1080
aaagaaaaac	agatgctaaa	aattctctct	gaaaacagca	atccagaaaa	tgcttcaaga	1140
ctgacatcag	aggaagagtc	acaagggttc	aaaggcagtg	aaagagcaaa	gcccagagaaa	1200
atgtctcaag	aaccagaaat	aaataaggat	ggtgatagag	aggttgaaga	aggaatgaag	1260
aagcatgaaa	gtaataatgt	gggattacta	gaaaacctga	ctaattggtgt	cactgctggc	1320
aattggtgata	atggattaat	tcctcaagg	aagagcagaa	cacctgaaaa	tcagcaattt	1380
cctgacaacg	aaagtgaaga	gtatcacaga	atttgogaat	tagtttctga	ctacaaagaa	1440
aaacagatgc	aaaaatactc	ttctgaaaac	agcaacccag	aacaagactt	aaagctgaca	1500
tcagaggaag	gtcacaaaag	gcttgagggg	agtgaanaatg	gccagccaga	gctagaagaa	1560
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ctgactaatg	gtgccactgc	tggcaatggt	gatgatggat	taattcctcc	aagggaagagc	1680
agaacacctg	aaagccagca	atttcctgac	actgagaatg	aagagtatca	cagtgaacgaa	1740
caaatgata	ctcagaagca	attttgtgaa	gaacagaaca	ctggaatatt	acacgatgag	1800
attctgattc	atgaagaaaa	gcagatagaa	gtggttgaaa	aatgaattc	tgagctttct	1860
cttaqttgta	agaaagaaaa	agacatcttg	catgaaaata	gtacgttgcg	ggaagaaatt	1920
gccatgctaa	gactggagct	agacacaaatg	aaacatcaga	gccagctaaa	aaaaaaaaaa	1980
aaagaaagaaa	aaagaaagaaa					2000

<210> 375

<211> 2040
 <212> DNA
 <213> Homo sapi n

<400> 375
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 agcaacgttg gcacttctgg agaccacgac gactctgcta tgaagacact caggagcaag 180
 atgggcaagt ggtgcogcca ctgcttcccc tgctgcaggg ggagtggcaa gagcaacgtg 240
 ggctgttctg gagaccacga cgaactctgt atgaagacac tcaggaaaca gatgggcaag 300
 tgggtgctgcc actgcttccc ctgctgcagg gggagcggca agagcaagggt gggcgtttgg 360
 ggagactacg atgacagtgc cttcatggag cccaggtaac acgtccgttg agaagatctg 420
 gacaagctcc acagagctgc ctggtggggt aaagtcccc gaaaggatct catogtcatg 480
 ctacgggaca ctgacgtgaa caagaaggac aagcnaaaga ggactgctct acatctgguc 540
 tctgccaatg ggauttcaga agtagtaaaa ctctgtctgg acagacgatg tcaactcaat 600
 gtccttgaca acaaaaagag gacagctctg ataaaggccg tacaatgcca ggaagatgaa 660
 tgtgcgttaa tgttgctggg acatggcact gatcccaata ttccagatga gtatggaaal 720
 accactctgc actacgctat ctataatgaa gataaettca tggccaaagc actgctctta 780
 tatggctgtg atatcgaaac aaaaaacaa catggcctcc caccactgtt acttggtgtg 840
 catgagcaaa aacagcaagl cgtgaatttt tlaatcaaga aaaaaagcga tttaaatgca 900
 ctggatagat atggaaggac tgcctcctca cttgctgtat gttgtggatc agcaagtata 960
 gtcagccttc tacttgagca aaatattgat gtatctttct aagatctatc tggacagacg 1020
 gccagagagt atgctgtttc tagtcatcat catgtaattt gccagttact ttctgactac 1080
 aaagaaasac agatgctaaa aatctcttct gaaaacagca atccagaaca agacttaaa 1140
 ctgacatcag aggaagagtc acaaagggtc aaaggcagtg asaatagcca gccagagaaa 1200
 atgtctcaag aaccagaaat aaataaggat ggtgatagag aggttgaaag agaatgaag 1260
 aagcatgaaa gtaataatgt gggattacta gaaaacptga ctaatgggtg cactgctggc 1320
 aatggtgata atggattaat tctcacaagg aagagcagaa cacctgaaaa tcagcaattt 1380
 cctgacaacg aaagtgaaga gtatcacaga atttgogaat tagtttctga ctacaaagaa 1440
 aaacagatgc caaatactc ttctgaaaac agcaaccag aacnagactt aagctgac 1500
 tcagaggaag agtcacaaaq guttgaggag actgaanaatg gacagccaga gaaagatct 1560
 caagaaccag aataaataa ggalggatga agagagctag aaaaalltat ggctatcgaa 1620
 gaaatgaaga agcaggaag tactcatgtc ggaatccag aaacctgac taatggtgcc 1680
 actgctggcc atggtatcga tggaltcaat ctccaaagga agagcagaac aactgaaagc 1740
 cagcaatttc ctgacactga gaatgaagag tatcacagt angaacaana tgatactcag 1800
 aagcaacttt gtgaagaaca gaacactgga atattacag atgagattct gattcatgaa 1860
 gaaaagcaga tagaagtgg tgaasaaatg aattctgagc ttctcttag ttgtaagaaa 1920
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 gagctagaca caatgaacaa tcagagccag ctaaaaaana aaaaaaana aaaaaaana 2040

<210> 376
 <211> 329
 <212> PRT
 <213> Homo sapien

<400> 376
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 Leu His Leu Ala Gly Ser Asp Leu Leu Ser Arg Ser Leu Met Ala Glu
 20 25 30
 Glu Tyr Thr Ile Val His Ala Ser Phe Ile Ser Cys Ile Ser Ser Ser
 35 40 45
 Leu Asp Gly Gln Gly Glu Arg Gln Glu Gln Arg Gly His Phe Trp Arg
 50 55 60
 Pro Gln Arg Leu Leu Cys Glu Asp Ala Trp Glu Gln Glu Val Gln Val
 65 70 75 80
 Val Leu Pro Leu Leu Pro Leu Leu Gln Gly Ser Gly Lys Ser Asn Val
 85 90 95
 Val Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe Met Asp Pro Arg Tyr
 100 105 110
 His Val His Gly Glu Asp Leu Asp Lys Leu His Arg Ala Ala Trp Trp
 115 120 125

116

Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met Leu Arg Asp Thr Asp
 130 135 140
 Val Asn Lys Arg Asp Lys Gln Lys Arg Thr Ala Leu His Leu Ala Ser
 145 150 155 160
 Ala Asn Gly Asn Ser Glu Val Val Lys Leu Val Leu Asp Arg Arg Cys
 165 170 175
 Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr Ala Leu Thr Lys Ala
 180 185 190
 Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met Leu Leu Glu His Gly
 195 200 205
 Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr
 210 215 220
 Ala Val Tyr Asn Glu Asp Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr
 225 230 235 240
 Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly Leu Thr Pro Leu Leu
 245 250 255
 Leu Gly Ile His Glu Gln Lys Gln Gln Val Val Lys Phe Leu Ile Lys
 260 265 270
 Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr Gly Arg Thr Ala Leu
 275 280 285
 Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile Val Ser Pro Leu Leu
 290 295 300
 Glu Gln Asn Val Asp Val Ser Ser Gln Asp Leu Glu Arg Arg Pro Glu
 305 310 315 320
 Ser Met Leu Phe Leu Val Ile Ile Met
 325

<210> 377
 <211> 148
 <212> PRT
 <213> Homo sapien

<220>
 <221> VARIANT
 <222> (1)...(148)
 <223> Xaa = Any Amino Acid

<400> 377
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 Trp Thr Ser Ser Thr Glu Leu Pro Trp Trp Gly Lys Val Pro Arg Lys
 20 25 30
 Asp Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Xaa Asp Lys
 35 40 45
 Gln Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu
 50 55 60
 Val Val Lys Leu Xaa Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp
 65 70 75 80
 Asn Lys Lys Arg Thr Ala Leu Xaa Lys Ala Val Gln Cys Gln Glu Asp
 85 90 95
 Glu Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro
 100 105 110
 Asp Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Xaa Tyr Asn Glu Asp
 115 120 125
 Lys Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser
 130 135 140
 Lys Asn Lys Val
 145

<210> 378
 <211> 1719
 <212> PRT

<213> Homo sapien

<400> 378

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Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser Ser Val Lys Lys
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 20      25      30
Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35      40      45
His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50      55      60
Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65      70      75      80
Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85      90      95
Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
100      105      110
Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
115      120      125
Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
130      135      140
Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
145      150      155      160
Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
165      170      175
Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
180      185      190
Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
195      200      205
Ala Leu Ile Lys Ala Val Cln Cys Gln Glu Asp Glu Cys Ala Leu Met
210      215      220
Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
225      230      235      240
Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
245      250      255
Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
260      265      270
Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
275      280      285
Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
290      295      300
Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
305      310      315      320
Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
325      330      335
Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
340      345      350
Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
355      360      365
Ser Ser Glu Asn Ser Asn Pro Glu Asn Val Ser Arg Thr Arg Asn Lys
370      375      380
Pro Arg Thr His Met Val Val Glu Val Asp Ser Met Pro Ala Ala Ser
385      390      395      400
Ser Val Lys Lys Pro Phe Gly Leu Arg Ser Lys Met Gly Lys Trp Cys
405      410      415
Cys Arg Cys Phe Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly
420      425      430
Thr Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys
435      440      445
Met Gly Lys Trp Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly
450      455      460
Lys Ser Asn Val Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys

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465 470 475 480
 Thr Leu Arg Asn Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys
 485 490 495
 Cys Arg Gly Ser Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp
 500 505 510
 Asp Ser Ala Phe Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu
 515 520 525
 Asp Lys Leu His Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp
 530 535 540
 Leu Ile Val Met Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln
 545 550 555 560
 Lys Arg Thr Ala Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val
 565 570 575
 Val Lys Leu Leu Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn
 580 585 590
 Lys Lys Arg Thr Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu
 595 600 605
 Cys Ala Leu Met Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp
 610 615 620
 Glu Tyr Gly Asn Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys
 625 630 635 640
 Leu Met Ala Lys Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys
 645 650 655
 Asn Lys His Gly Leu Thr Pro Leu Leu Gly Val His Glu Gln Lys
 660 665 670
 Gln Gln Val Val Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala
 675 680 685
 Leu Asp Arg Tyr Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly
 690 695 700
 Ser Ala Ser Ile Val Ser Leu Leu Leu Glu Cln Asn Ile Asp Val Ser
 705 710 715 720
 Ser Gln Asp Leu Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser
 725 730 735
 His His His Val Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln
 740 745 750
 Met Leu Lys Ile Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys
 755 760 765
 Leu Thr Ser Glu Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser
 770 775 780
 Gln Pro Glu Lys Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp
 785 790 795 800
 Arg Glu Val Glu Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly
 805 810 815
 Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn
 820 825 830
 Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe
 835 840 845
 Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser
 850 855 860
 Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn
 865 870 875 880
 Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu
 885 890 895
 Glu Gly Ser Glu Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile
 900 905 910
 Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn
 915 920 925
 Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro
 930 935 940
 Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu
 945 950 955 960
 Asn Glu Glu Tyr His S r Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe

	965		970		975
Cys Glu Glu Gln	Asn Thr Gly Ile Leu	His Asp Glu Ile Leu	Ile His		
	980		985		990
Glu Glu Lys Gln	Ile Glu Val Val Glu	Lys Met Asn Ser Glu	Leu Ser		
	995		1000		1005
Leu Ser Cys Lys	Lys Glu Lys Asp Ile Leu	His Glu Asn Ser Thr	Leu		
	1010		1015		1020
Arg Glu Glu Ile	Ala Met Leu Arg Leu	Glu Leu Asp Thr Met	Lys His		
	1025		1030		1035
Gln Ser Gln Leu	Pro Arg Thr His Met Val	Val Glu Val Asp Ser	Met		
	1045		1050		1055
Pro Ala Ala Ser	Ser Val Lys Lys Pro Phe	Gly Leu Arg Ser Lys	Met		
	1060		1065		1070
Gly Lys Trp Cys	Cys Arg Cys Phe Pro Cys	Cys Arg Glu Ser Gly	Lys		
	1075		1080		1085
Ser Asn Val Gly	Thr Ser Gly Asp His Asp	Asp Ser Ala Met Lys	Thr		
	1090		1095		1100
Leu Arg Ser Lys	Met Gly Lys Trp Cys Arg	His Cys Phe Pro Cys	Cys		
	1105		1110		1115
Arg Gly Ser Gly	Lys Ser Asn Val Gly Ala	Ser Gly Asp His Asp	Asp		
	1125		1130		1135
Ser Ala Met Lys	Thr Leu Arg Asn Lys Met	Gly Lys Trp Cys Cys	His		
	1140		1145		1150
Cys Phe Pro Cys	Cys Arg Gly Ser Gly Lys	Ser Lys Val Gly Ala	Trp		
	1155		1160		1165
Gly Asp Tyr Asp	Asp Ser Ala Phe Met Glu	Pro Arg Tyr His Val	Arg		
	1170		1175		1180
Gly Glu Asp Leu	Asp Lys Leu His Arg Ala	Ala Trp Trp Gly Lys	Val		
	1185		1190		1195
Pro Arg Lys Asp	Leu Ile Val Met Leu Arg	Asp Thr Asp Val Asn	Lys		
	1205		1210		1215
Lys Asp Lys Gln	Lys Arg Thr Ala Leu His	Leu Ala Ser Ala Asn	Gly		
	1220		1225		1230
Asn Ser Glu Val	Val Lys Leu Leu Leu Asp	Arg Arg Cys Gln Leu	Asn		
	1235		1240		1245
Val Leu Asp Asn	Lys Lys Arg Thr Ala Leu	Ile Lys Ala Val Gln	Cys		
	1250		1255		1260
Gln Glu Asp Glu	Cys Ala Leu Met Leu Leu	Glu His Gly Thr Asp	Pro		
	1265		1270		1275
Asn Ile Pro Asp	Glu Tyr Gly Asn Thr Thr	Leu His Tyr Ala Ile	Tyr		
	1285		1290		1295
Asn Glu Asp Lys	Leu Met Ala Lys Ala Leu	Leu Leu Tyr Gly Ala	Asp		
	1300		1305		1310
Ile Glu Ser Lys	Asn Lys His Gly Leu Thr	Pro Leu Leu Leu Gly	Val		
	1315		1320		1325
His Glu Gln Lys	Gln Gln Val Val Lys Phe	Leu Ile Lys Lys Lys	Ala		
	1330		1335		1340
Asn Leu Asn Ala	Leu Asp Arg Tyr Gly Arg	Thr Ala Leu Ile Leu	Ala		
	1345		1350		1355
Val Cys Cys Gly	Ser Ala Ser Ile Val Ser	Leu Leu Leu Glu Gln	Asn		
	1365		1370		1375
Ile Asp Val Ser	Ser Gln Asp Leu Ser Gly	Gln Thr Ala Arg Glu	Tyr		
	1380		1385		1390
Ala Val Ser Ser	His His His Val Ile Cys	Gln Leu Leu Ser Asp	Tyr		
	1395		1400		1405
Lys Glu Lys Gln	Met Leu Lys Ile Ser Ser	Glu Asn Ser Asn Pro	Glu		
	1410		1415		1420
Gln Asp L u Lys	Leu Thr Ser Glu Glu Glu	Ser Gln Arg Phe Lys	Gly		
	1425		1430		1435
S r Clu Asn Ser	Gln Pro Glu Lys Met Ser	Gln Glu Pro Glu Il	Asn		
	1445		1450		1455
Lys Asp Gly Asp	Arg Glu Val Glu Glu Glu	Met Lys Lys His Glu	Ser		

120

1460 1465 1470
 Asn Asn Val Gly Leu Leu Glu Asn Leu Thr Asn Gly Val Thr Ala Gly
 1475 1480 1485
 Asn Gly Asp Asn Gly Leu Ile Pro Gln Arg Lys Ser Arg Thr Pro Glu
 1490 1495 1500
 Asn Gln Gln Phe Pro Asp Asn Glu Ser Glu Glu Tyr His Arg Ile Cys
 1505 1510 1515 152
 Glu Leu Val Ser Asp Tyr Lys Glu Lys Gln Met Pro Lys Tyr Ser Ser
 1525 1530 1535
 Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu Glu Glu
 1540 1545 1550
 Ser Gln Arg Leu Glu Gly Ser Glu Asn Cln Gln Pro Glu Lys Arg Ser
 1555 1560 1565
 Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Leu Glu Asn Phe
 1570 1575 1580
 Met Ala Ile Glu Glu Met Lys Lys His Gly Ser Thr His Val Gly Phe
 1585 1590 1595 160
 Pro Glu Asn Leu Thr Asn Gly Ala Thr Ala Gly Asn Gly Asp Asp Gly
 1605 1610 1615
 Leu Ile Pro Pro Arg Lys Ser Arg Thr Pro Glu Ser Gln Gln Phe Pro
 1620 1625 1630
 Asp Thr Glu Asn Glu Glu Tyr His Ser Asp Glu Gln Asn Asp Thr Gln
 1635 1640 1645
 Lys Gln Phe Cys Glu Glu Gln Asn Thr Gly Ile Leu His Asp Glu Ile
 1650 1655 1660
 Leu Ile His Glu Glu Lys Gln Ile Glu Val Val Glu Lys Met Asn Ser
 1665 1670 1675 168
 Glu Leu Ser Leu Ser Cys Lys Lys Glu Lys Asp Ile Leu His Glu Asn
 1685 1690 1695
 Ser Thr Leu Arg Glu Glu Ile Ala Met Leu Arg Leu Glu Leu Asp Thr
 1700 1705 1710
 Met Lys His Gln Ser Gln Leu
 1715

<210> 379
 <211> 656
 <212> PRT
 <213> Homo sapien

<400> 379
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 20 25 30
 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175

Leu His L u Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu
 450 455 460
 Ser Glu Glu Tyr His Arg Ile Cys Glu Leu Val Ser Asp Tyr Lys Glu
 465 470 475 480
 Lys Gln Met Pro Lys Tyr Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp
 485 490 495
 Leu Lys Leu Thr Ser Glu Glu Glu Ser Gln Arg Leu Glu Gly Ser Glu
 500 505 510
 Asn Gly Gln Pro Glu Leu Glu Asn Phe Met Ala Ile Glu Glu Met Lys
 515 520 525
 Lys His Gly Ser Thr His Val Gly Phe Pro Glu Asn Leu Thr Asn Gly
 530 535 540
 Ala Thr Ala Gly Asn Gly Asp Asp Gly Leu Ile Pro Pro Arg Lys Ser
 545 550 555 560
 Arg Thr Pro Glu Ser Gln Gln Phe Pro Asp Thr Glu Asn Glu Glu Tyr
 565 570 575
 His Ser Asp Glu Gln Asn Asp Thr Gln Lys Gln Phe Cys Glu Glu Gln
 580 585 590
 Asn Thr Gly Ile Leu His Asp Glu Ile Leu Ile His Glu Glu Lys Gln
 595 600 605
 Ile Glu Val Val Glu Lys Met Asn Ser Glu Leu Ser Leu Ser Cys Lys
 610 615 620
 Lys Glu Lys Asp Ile Leu His Glu Asn Ser Thr Leu Arg Glu Glu Ile
 625 630 635 640
 Ala Met Leu Arg Leu Glu Leu Asp Thr Met Lys His Gln Ser Gln Leu
 645 650 655

<210> 380

<211> 671
 <212> PRT
 <213> Homo sapien

<400> 380
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 Pro Cys Cys Arg Glu Ser Gly Lys Ser Asn Val Gly Thr Ser Gly Asp
 35 40 45
 His Asp Asp Ser Ala Met Lys Thr Leu Arg Ser Lys Met Gly Lys Trp
 50 55 60
 Cys Arg His Cys Phe Pro Cys Cys Arg Gly Ser Gly Lys Ser Asn Val
 65 70 75 80
 Gly Ala Ser Gly Asp His Asp Asp Ser Ala Met Lys Thr Leu Arg Asn
 85 90 95
 Lys Met Gly Lys Trp Cys Cys His Cys Phe Pro Cys Cys Arg Gly Ser
 100 105 110
 Gly Lys Ser Lys Val Gly Ala Trp Gly Asp Tyr Asp Asp Ser Ala Phe
 115 120 125
 Met Glu Pro Arg Tyr His Val Arg Gly Glu Asp Leu Asp Lys Leu His
 130 135 140
 Arg Ala Ala Trp Trp Gly Lys Val Pro Arg Lys Asp Leu Ile Val Met
 145 150 155 160
 Leu Arg Asp Thr Asp Val Asn Lys Lys Asp Lys Gln Lys Arg Thr Ala
 165 170 175
 Leu His Leu Ala Ser Ala Asn Gly Asn Ser Glu Val Val Lys Leu Leu
 180 185 190
 Leu Asp Arg Arg Cys Gln Leu Asn Val Leu Asp Asn Lys Lys Arg Thr
 195 200 205
 Ala Leu Ile Lys Ala Val Gln Cys Gln Glu Asp Glu Cys Ala Leu Met
 210 215 220
 Leu Leu Glu His Gly Thr Asp Pro Asn Ile Pro Asp Glu Tyr Gly Asn
 225 230 235 240
 Thr Thr Leu His Tyr Ala Ile Tyr Asn Glu Asp Lys Leu Met Ala Lys
 245 250 255
 Ala Leu Leu Leu Tyr Gly Ala Asp Ile Glu Ser Lys Asn Lys His Gly
 260 265 270
 Leu Thr Pro Leu Leu Leu Gly Val His Glu Gln Lys Gln Gln Val Val
 275 280 285
 Lys Phe Leu Ile Lys Lys Lys Ala Asn Leu Asn Ala Leu Asp Arg Tyr
 290 295 300
 Gly Arg Thr Ala Leu Ile Leu Ala Val Cys Cys Gly Ser Ala Ser Ile
 305 310 315 320
 Val Ser Leu Leu Leu Glu Gln Asn Ile Asp Val Ser Ser Gln Asp Leu
 325 330 335
 Ser Gly Gln Thr Ala Arg Glu Tyr Ala Val Ser Ser His His His Val
 340 345 350
 Ile Cys Gln Leu Leu Ser Asp Tyr Lys Glu Lys Gln Met Leu Lys Ile
 355 360 365
 Ser Ser Glu Asn Ser Asn Pro Glu Gln Asp Leu Lys Leu Thr Ser Glu
 370 375 380
 Glu Glu Ser Gln Arg Phe Lys Gly Ser Glu Asn Ser Gln Pro Glu Lys
 385 390 395 400
 Met Ser Gln Glu Pro Glu Ile Asn Lys Asp Gly Asp Arg Glu Val Glu
 405 410 415
 Glu Glu Met Lys Lys His Glu Ser Asn Asn Val Gly Leu Leu Glu Asn
 420 425 430
 Leu Thr Asn Gly Val Thr Ala Gly Asn Gly Asp Asn Gly Leu Ile Pro
 435 440 445
 Gln Arg Lys Ser Arg Thr Pro Glu Asn Gln Gln Phe Pro Asp Asn Glu

450	Ser Glu Glu Tyr His Arg	455	Ile Cys Glu Leu Val	460	Ser Asp Tyr Lys Glu
465	Lys Gln Met Pro Lys Tyr Ser Ser	470	Glu Asn Ser Asn Pro Glu Gln Asp	475	480
	485	490	505	495	510
Leu Lys Leu Thr Ser Glu Glu Glu	Ser Gln Arg Leu Glu Gly Ser Glu	515	520	525	530
Asn Gly Gln Pro Glu Lys Arg Ser	Gln Glu Pro Glu Ile Asn Lys Asp	535	540	545	550
Gly Asp Arg Glu Leu Glu Asn Phe	Met Ala Ile Glu Glu Met Lys Lys	555	560	565	570
His Gly Ser Thr His Val Gly Phe	Pro Glu Asn Leu Thr Asn Gly Ala	575	580	585	590
Thr Ala Gly Asn Gly Asp Asp Gly	Leu Ile Pro Pro Arg Lys Ser Arg	595	600	605	610
Thr Pro Glu Ser Gln Gln Phe Pro	Asp Thr Glu Asn Glu Glu Tyr His	615	620	625	630
Ser Asp Glu Gln Asn Asp Thr Gln	Lys Gln Phe Cys Glu Glu Gln Asn	635	640	645	650
Thr Gly Ile Leu His Asp Glu Ile	Leu Ile His Glu Glu Lys Gln Ile	655	660	665	670
Glu Val Val Glu Lys Met Asn Ser	Glu Leu Ser Leu Ser Cys Lys Lys				
Glu Lys Asp Ile Leu His Glu Asn	Ser Thr Leu Arg Glu Glu Ile Ala				
Met Leu Arg Leu Glu Leu Asp Thr	Met Lys His Gln Ser Gln Leu				

<210> 381
 <211> 251
 <212> DNA
 <213> Homo sapien

<400> 381	
ggagaagcgt ctgtcggggc aggaaggggt ttccctgcc tctcacctgt cctcaccac	60
ggtaacatgc ttcccttaag ggtatcccaa cccaggggcc tcaccatgac ctctgaggg	120
ccaatatccc aggagaagca ttggggagtt gggggcaggt gaaggaccca ggactcacac	180
atcctggggc tccaaggcag aggagagggc cctcaagaag gtcaggagga aatccgtaa	240
caagcagtc a	251

<210> 382
 <211> 3279
 <212> DNA
 <213> Homo sapiens

<400> 382	
cttcctgcag ccccccctgt gglgaggggc acgggcagga acagtggacc caacatggaa	60
atgclaggagg gtgtcaggaa gtatcgggc tctggggcag ggaggagggg tggggagtgt	120
cactgggagg ggacatcctg cagagggtag gagtggcga acacccgctg caggggaggg	180
ggagcgcctg cggcacctgg gggagcagag ggagcagcac ctgccaggc ctgggaggag	240
gggcctggag ggcgtgagga ggagcgaggg ggctgcattg ctggagttag ggatcagggg	300
cagggcgcga gatggcctca cacagggaag agagggcccc tctgcaggg cctcacctgg	360
grracaggag gacactgctt ttctcttag gagttaggag ctgtggatgg tgctggacag	420
aagaaggaca gggcctggct cagggtgtcc gaggtgtcg ctggcttccc ttggggatca	480
gactgcaggg agggagggcg gcagggttgt ggggggagtg acgatgagga tgacctggg	540
gtggctccag gccttgcccc tgcttgggccc ctccaccage ctccctcaca gtctcctggc	600
cctcagtcct tcccctccac tccatcctcc atctggcctc agtgggtcat tctgatcact	660
gaactgacca taccagccc tgcccacggc cctccatggc tccccaatgc cctggagagg	720
ggacatctag tcagagagta gtctgaaga ggtggcctct gggatgtgccc tgtgggggca	780
gcactcctga gatggctccc gccctcatcc tgcctgacct tctgcaggga ctgtcctcct	840
ggaccttgcc ccttgtgcag gacttggacc ctgaagtcct ctccccatag gccaaagact	900
gagccttgtt cctctgtgtg gactcctgc ccatattctt gggggagtgg gttctggaqa	960

```

catttctgtc tglccctgag agctgggaat tgcctcagc catctgcctg cgcggttctg 1020
agagatggag ttgcctagac agttattggg gccaatcttt ctactgtgt ctctcctcct 1080
ttaaccttag gglgattctg ggggtccact tgcctgtaat ggtgtgcttc aaggtatcac 1140
atcatggggc cctgagccat gtgucctgoc tgaanaagcct gctgtgtaca ccaaggtggt 1200
gcaltacccg aagtgagatca aggaacacat cgcagccaac cctgagtgcc cctgtccca 1260
cccctacctc tegtanaattt aagtcacact cactgtctg catcacttg cctttctgga 1320
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tgtatgccaa tglttctgaa atgggtataa ttctgctc tccttcggaa cactggctgt 1500
ctctgaagac ttctgctca gtllcagtg aagacacac aagacgtgg gtgacctgt 1560
tgtttgtggg gtgcagagat ggggggggtg gggccacac tygaagagt gacagtaca 1620
caaggtggac actctctaca gatcactgag gataagctgg aqccacact catgaggcac 1680
acacacagca aggttgagc tgtaaacata gcccacgct gctgggggc actgggaagc 1740
ctagataaag ccgtgagcag aaagaagggg aggatcctcc talgttgtt gaggagggac 1800
tagggggaga aactgaaagc tgattaatta caggaggttc gttcaggtcc ccnaaacac 1860
cgtcagattt gatgatttcc tagcaggact tacagaaat aagagctatc atgctgtgg 1920
ttattatggt ttgttacatt gataggatag atactgaaat cagcaacaa aacagatgta 1980
tagattagag tgtggagaaa acagaggaaa acttgacgtt acgaagact ggcacttggc 2040
tttactaagt ttccagactg gcaggaaagt aaacctatta ggctgaggac cttgtggagt 2100
gtagctgac cagctgatag aggaactagc caggtggggg cctttccctt tggatggggg 2160
goatatccga cagttattct ctccaagtgg agacttacgg acagcatata attctccctg 2220
caaggatgta tgataatatg tacaagtaa ttccaactga ggaagctcac ctgatcctta 2280
gtgtccaggg ttttactgg ggtctgtag gacagtatg gactacttg ataattgacc 2340
tgaagtccct agacctgagg ttccctagag ttcaaacaga tacagcatgg tccagagtcc 2400
cagatgtaca aaacagggg ttcatcaca atccatctt tagcatgaag ggtctggcat 2460
ggcccaggc ccaagataa tcaaggcaat tgggcagaa atgccaagga atcaaatgtc 2520
atctccaggg agttattcaa ggtgagccc tttacttgg atgtacaggc tttagcagt 2580
gcaggcclgc tyagtcaacc tttattgta caggggatga gggaaagga gaggatgagg 2640
aagccccctt ggggatltag ttgtgtctt tgatcaggtg gtctatgggg ctatccctac 2700
aaagaagaat ccagaaatag gggcacatt aggaatgata ctgagccca rtgagccca 2760
atcattgttt tatttgcctt ctttcacac cattggtgag ggagggatta ccacctggg 2820
gttatgaaga tggttgaaca cccacacat agcaccggag atatgagatc aacagtctt 2880
tagccataga gattcacagc ccagagcagg aggacgtgc acaccatgca ggtgacatg 2940
ggggatgocg tcgggatttg tgtgaagaag caaggactgt tagaggcagg ctttatagta 3000
acaagaaggt ggggcaaac ctgatttccg tgggggaatg tcatggtctt gctttactaa 3060
gttttgagac tggcaggtag tgaactcat taggctgaga acctgttgg atgcagctga 3120
cccagctgat agaggagta gccaggtgg agcctttccc agtgggtgt ggacatatc 3180
ggcaggatgt tgtggcact ctggttacag atactgggc agcaataaa actgaatctt 3240
gttttcagac cttaaaaaa aaaaaaa aaaaagtttt 3279

```

<210> 383

<211> 155

<212> PR3

<213> Homo sapiens

<400> 383

```

Met Ala Gly Val Arg Asp Gln Gly Gln Gly Ala Arg Trp Pro His Thr
          5                      10                      15

```

```

Gly Lys Arg Gly Pro Leu Leu Gln Gly Leu Thr Trp Ala Thr Gly Gly
          20                      25                      30

```

```

His Cys Phe Ser Ser Glu Glu Ser Gly Ala Val Asp Gly Ala Gly Gln
          35                      40                      45

```

```

Lys Lys Asp Arg Ala Trp Leu Arg Cys Pro Glu Ala Val Ala Gly Phe
          50                      55                      60

```

```

Pro Leu Gly Ser Asp Cys Arg Glu Gly Gly Arg Gln Gly Cys Gly Gly
          65                      70                      75                      80

```

```

Ser Asp Asp Glu Asp Asp Leu Gly Val Ala Pro Gly Leu Ala Pro Ala

```

125

	85		90		95
Trp Ala Leu Thr Gln Pro Pro S r Gln Ser Pro Gly Pro Gln S r Leu					
	100		105		110
Pro Ser Thr Pro Ser Ser Ile Trp Pro Gln Trp Val Ile Leu Ile Thr					
	115		120		125
Glu Leu Thr Ile Pro Ser Pro Ala His Gly Pro Pro Trp Leu Pro Asn					
	130		135		140
Ala Leu Glu Arg Gly His Leu Val Arg Glu					
	145		150		

<210> 384
 <211> 557
 <212> DNA
 <213> Homo sapiens

<400> 384
 ggatcctcta gagcgccgc ctactactac taaattcgcg gccgcgtcga cgaagaagag 60
 aaagatgtgt ttgttttggt actctctgtg gtcccttcca atgctgtggg ttccaacca 120
 ggggaagggt ccccttttgca ttgccaagtg ccataaccat gagcaactact ctaccatggt 180
 tctgectcct ggccaagcag gctggtttgc aagaatgaaa tgaatgattc tacagctagg 240
 acttaacctt gaaatggaaa gtcttgcaat cccatttgca ggatccgtct gtgcacatgc 300
 ctctgtagag agcagcattc ccagggaacct tggaaacagt tggcaactga aggtgcttgc 360
 tccccaagac acatccctaaa aggtgtttgt atggtgaaaa cgtcttccct ctttatfccc 420
 ccttcttatt tatgtgaaca actgtttgtc tttttttgta tcttttttaa actgtaaaat 480
 tcaattgtga aattgcaatc catgcacata acttatgcga ttttttttct aaagtaaaaa 540
 aaaaaaa 557

<210> 385
 <211> 337
 <212> DNA
 <213> Homo sapiens

<400> 385
 ttcccagggt atgtgcgagg gaagacacat ttactatcct tgatggggct gattccttta 60
 gtttctctag cagcagatgg gttaggagga agtgacccaa gtggttgact cctatgtgca 120
 tctcaaagcc atctgctgtc ttcgagtaag gacacatcat cactcctgca ttgttgatca 180
 aaacgtggag gtgcttttcc tcagctaaga agcccttagc azaagctuga atagacttag 240
 tatcagacag gtccagtffc cgcaccaaca cctgctggtt cctgtgctg glctggatct 300
 ctttgccac caattccccc ttttcccat cccgca 337

<210> 386
 <211> 300
 <212> DNA
 <213> Homo sapiens

<400> 386
 gggcccgcta ccggcccagg cccgcctctg cgagtctcc tcccggggtg cctgcccga 60
 gccgcctcgg ccagaggggt gggcgcgggg ctgectctac cggctggcgg ctgtaactca 120
 gcgaccttgg ccgaagggt ctagcaagga cccaccgacc ccagccggg cggcgcggc 180
 gcggaacttg ccggtgtgt gggcgggagc ggactgctg tccgcggaag ggcagcgaag 240
 atgttagcct tctgtgccag gaccgtggac cgatcccagg gctgtggtgt aacctcagcc 300

<210> 387
 <211> 537
 <212> DNA
 <213> Homo sapiens

<400> 387

```

gggcccagtc gggcaccag ggaactcttg caggetteet tcoctgggac atcaaggctg 60
ccccctctg tgcctcatg atcagcact atgagttcgg caaaagcttc ttccagaggc 120
tgaaccagga cccgctcttg ggcggctgaa aggggcaagg aggcaggac cccgtctctc 180
caccggatgg gggaggggca gggggagacc cagccaagtg ccttttcttc agcactgagg 240
gagggggctt gtttcccttc cctcccgagg acagctcca gggcagggtt gtccctctgg 300
gcggcccagc acttctctcg acacagcttc ttcttgetgc tccagtcgtg gggatcatca 360
cttaccacc ccccaagttc agacacaaat ctccagctg cccctctcgt gtttccctgt 420
gtttgctgta gctgggcag tctccaggaa ccaagagcc ctccagctgg tgtagtctcc 480
ctgacccctg taatttctt aggtctaaag atgatgaact tcaaaaaaaa aaaaaaa 537

```

<210> 388

<211> 520

<212> DNA

<213> Homo sapiens

<400> 388

```

aggataattt ttaaaccaat caaatgaaa aaacaaacaa acaaaaaagg aatgtctatg 60
tgaggttaaa ccagtttgca ttccctaat gtggaaaaag taagaggact actcagcact 120
gtttgaagat tgctctctt acagcttctg agaatttgtt tatttcactt gccagtgaa 180
ggaccccttc ccaacatgc cccagccac cctaagcat ggtcccttgt caccaggcaa 240
ccaggaaact gctacttgt gacctacca gagaccagga gggtttggtt agctcacagg 300
acttccccc cccagaaga tttagcatcc atactagact catactcaac tcaactaggc 360
tcatactcaa ttgatggta tttagacaatt ccatttcttt ctggttatta taaacagaaa 420
atctttctc ttctcattac cagtaaaagg tcttggtatc ttctgttggt aatgatttct 480
atgaacttgt uttattttta tgggtgggtt tttttctggt 520

```

<210> 389

<211> 365

<212> DNA

<213> Homo sapiens

<400> 389

```

cgttgcccc gtttgacaga aggaaggcg gagottatto aaagtctaga gggagtggag 60
gagtttaagg tggatttcag atctgcctgg ttccagccgc agtgtgccct ctgctcccc 120
uucgactttc caaataatct caccagcgcc ttccagctca ggcgtcctag aagcgtcttg 180
aagcctatgg ccagctgtct ttgtgttccc tctcaccgcg ctgtcctcac agctgagact 240
cccaggaaac cttcagacta ccttctctg ccttcagcaa ggggcgttgc ccacattctc 300
tgagggtcag lggaaagacc tagactccca ttgctagagg tagaaagggg aaggggtgctg 360
qqqag 365

```

<210> 390

<211> 221

<212> DNA

<213> Homo sapiens

<220>

<221> misc feature

<222> (1) ... (221)

<223> n = A, T, C or G

<400> 390

```

tgctctcca tcttgcccc gacttctctg tcaggaaagt ggggatggac cccatctgca 60
tacacggnnt ctcatgggtg tggaaacatct ctgcttgagg ttccaggaag ggcctctggct 120
gctctangag tctgancga ntggttgcgc canttgaca naaggaaagg cggagcttat 180
tcaaaagtcta gaggagtgag aggagtlag gctggatttc a 221

```

<210> 391

<211> 325

<212> DNA

<213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(325)
 <223> n = A,T,C or G

<400> 391
 tggagcaggt cccgagggcct ccttagagcc tggggccgac tctgtgncga tgcangcttt 60
 ctctcgccgc cagcctggag ctgctcctgg catctacca caalcagncg aggcgagcag 120
 tagccagggc actgctgcca acagcccgct cnnataccat catgtnaccc ggtgngctct 180
 naanttngat ntccanagcc ctaccacatn tagttctgct ctcccaccgg ntaccagccc 240
 caetgcccag gaatectaca gccagtcacc tglcccgcag tctctaccta ccagtacgat 300
 gagaacctcug gctactacta tgacc 325

<210> 392
 <211> 277
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(277)
 <223> n = A,T,C or G

<400> 392
 atattgttta actccttccct ttatatcttt taacatittc atggngaaag gtccacatct 60
 agtctcactt nggcagngn ctctactctg agtctcttcc ccggcctgnc ccagtngnca 120
 antaccanga accgncatgn cttaanacn ncctggtttn tgggttnntc aatgacctga 180
 tgcagtgcac caccctgtcc actacgtgat gutgtaggat taaagtctca caglgggcgg 240
 ctgaggatac agcgcccgct cctgtgttgc tggggaa 277

<210> 393
 <211> 566
 <212> DNA
 <213> Homo sapiens

<400> 393
 actagtcag tgtggtggaa ttogcgcccg cgtcgacgga caggtcagct gtctggetca 60
 gtgatctaca ttctgaagtt gtctgaaaat gtcttcatga tttaattcag cctaaacgtt 120
 ttgccgggaa cactgcagag acaatgctgt gaggtttcaa ccttagccca tctgcgggca 180
 gagaaggctct agtttgtcca tcagcattat catgatatac ggaactggta ctggtttaa 240
 gaggggtcta ggagatctgt cctttttaga guvaccttac ttataetgaa glatittgga 300
 ggggtggttt caaagtaga aatgtuctgt attccgala tcatctgla aacattttat 360
 catctattaa tcatuactgc ctgtatctat tatttatctc atctctctac gctggaaact 420
 ttctgcctua atglttactc tgccctttgt ttctgctagll tgtgttgttg aaaaaaaaaa 480
 catctctctg ctgactttta atttttgcac aaagttattt taactctatc aattaaaagc 540
 ttttgcctat caaaaaaaa aaaaaa 566

<210> 394
 <211> 384
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(384)
 <223> n = A,T,C or G

<400> 394
 gaacatacat gtcccggcac ctgagctgca gtctgacatc atequcatec cgggcctcgc 60
 tgcaaatng gaccgggcca aggctggact gctggcgct gtgaaggagc tacaggccna 120
 gcaggaggac cgggcittaa ggagttttaa gctgaqlgtc accttagacc ccaaalacca 180
 tcccaagatt atcgggagaa aggggcagct atttaeccaa atccggttgg agcatgacgt 240

128

```

gaacatccag ttccctgata aggacgatgg gaaccagccc caggaccaaa ttcccatcac 300
agggtacgaa aagaacacag aagctgccag ggatgctata ctgagaattg tgggtgaact 360
tgagcagatg gtttctgagg acgt 384

```

```

<210> 395
<211> 399
<212> DNA
<213> Homo sapiens

```

```

<400> 395
ggcaaaactg tgtgacctca ataagacctc gcagatccaa ggtcaagtat cagaagtqac 60
tctgaccttg gactccaaga cctacatcaa cagcctgggt atattagatg atgagccagt 120
tatcagaggt ttcatcattg cggaaattgt ggagtctaag gaaatcatgg cctctgaagt 180
attcaogtct ttccagtacc ctgagttctc tatagagttg cctaacacag gcagaatttg 240
ccagctactt gtctgcaatt gtatcttcaa gaataccctg gccatccctt tgactgaagt 300
caagttctct ttggaaagcc tgggcatctc ctcactacag acctctgacc atgggacggt 360
gcagcctggt gagaccatcc aatcccaat aaaatgcac 399

```

```

<210> 396
<211> 403
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(403)
<223> n = A,T,C or G

```

```

<400> 396
tggagttntc agtgcasaca agccataaag ctccagtagc aaattactgt ctacagaaa 60
gacattttca acctctgtct cagctgctga taanacaaat catgtgttta gcttgactcc 120
agacaaggac aacctgttcc ttcataactc tctagagaaa aaaaggagtt gttaytagat 180
actaaaaaaa gtggatgaat aatctggata tttttcctaa aagattcct tgaacacacal 240
taggaasatg gagggcctta tgatcagaat gctagaatta gtccattgtg ctgaagcagg 300
gtttagggga gggagtgagg gatanaagaa ggaaaaaaag aagaytgaga aaacctattl 360
atcaazgcag gtgctatcac tcaatcttag gcectgctct ttt 403

```

```

<210> 397
<211> 100
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(100)
<223> n = A,T,C or G

```

```

<400> 397
actagtnacg tgtggtggaa ttccggggcg cgtcgacctc naanccatcl ctatagcaaa 60
tccatcccog ctccgtggtg gtnacagaat gactgacaaa 100

```

```

<210> 398
<211> 278
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(278)
<223> n = A,T,C or G

```

```

<400> 398

```

129

```

gogggccgct cgacagcagt tccgcccggc ctgcgccctg ggtggyggatg tgcgtgcacgc 60
ccacctggac atctggaagt cagcggcctg gatgaaaagag cggacttcac ctggggcgat 120
tcactactgt gcctcgacca gtgagggagag ctggaccgac agcgagggtg actcatcatg 180
ctccgggcag cccatccacc tgtggcagtc cctcaggag ttgctactca agccccacag 240
ctatggccgc ttcattangt ggcacacaa ggaagagg 278

```

<210> 399
 <211> 298
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(298)
 <223> n = A,T,C or G

```

<400> 399
acggaggtgg aggaagcgnc cctgggatcg anaggatggg tectgncatt gacnccctcn 60
ggggtgcnng catggagcgc atgggcgggg gcctgggcca cggcatggat cgcgtgggct 120
ccagatcga ggcgatgggc ctggtcatgg accgatggg ctccgtggag cgcattgggt 180
ccggcattga ggcgatgggc ccgctgggcc tggaccacat ggccctccanc attganocga 240
tgggcccagac catggagcgc attggtcttg ggtggagcn catgggtgcc ggcattggg 298

```

<210> 400
 <211> 348
 <212> DNA
 <213> Homo sapiens

```

<400> 400
acatcaacta ctctctcatt ttaagggtatg gcagttccct tcctcccttt tteclgecll 60
gtacatgtac atgtatgaaa ttctcttctc ttaccgaact ctctccacac atcacaagggt 120
caaaagaacca cagcgttaga agggtaagag ggcacctat gaaatgaaat ggtgatttct 180
tgagtctctt ttttccacgt ttaaggggccc atggcaggac ttagagttgc gagttaagac 240
tgcagagggc tagagaatta ttcatcacag gctttgaggg caccatgtc acttatcccc 300
tataccctct caaccatccc ttgtctactc tgatgcccc aagatgcaac tgggcagcta 360
gtttggcccca taattctggg cctttgttgt ttgttttaat tacttgggca tccaggaag 420
ctttccagtg atctctaac atgggcccc ctctgggat caagccctc ccaggccctg 480
tccccagccc ctctgcccc agcccacccg cttgccttgg tgcacagccc tcccatggg 540
agcaggtt 548

```

<210> 401
 <211> 355
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(355)
 <223> n = A,T,C or G

```

<400> 401
actgtttcca tgttatgttt ctacacattg ctacctcagt gctcctggaa acttagcttt 60
tgatgtctcc aagtagtcca ccttcattta actctttgaa actgtatcat ctttgccaag 120
taagagtggg ggcctatttc agctgctttg acaaatgac tggctcctga cttaacgttc 180
tataaatgaa tgtgctgaag caaagtgcc atgggtggcg cgaagaagan aaagatgtgt 240
tttgttttgg actctctgtg gtcccttcca atgctgnggg ttccaacca ggggaagggt 300
cccttttga tggccaagt ccataacct gaggactact ctaccatggg tctgc 355

```

<210> 402
 <211> 407
 <212> DNA
 <213> Homo sapiens

130

<220>
 <221> misc_feature
 <222> (1)...(407)
 <223> n = A,T,C or G

<400> 402
 atggggcagg ctggataaag aaccaagarc cactggagla tgcgtgtcttc aagaaaccca 60
 tctcacatgc ggtggcatat atagggtcaa aataaaggaa tggagaaaaa tatttcaagg 120
 aatggaaaaa cagaaaaaag cagggtgttg actcctactt tctgacaaaa cagactatgc 180
 gaataaagat aaaaaagaga aggacattac aaagggtggtc ctgacctttg ataaatctca 240
 ttgcttgate ccaacctggg ctgttttaat tgcacaaacc aasaggataa ttgctgagg 300
 ttgtggagct tctccctgc agagagtcct tgatctcca aaatttggtt gagatgtag 360
 gntgattttg ctgacaactc cttttctgaa gttttactca tttcaa 407

<210> 403
 <211> 303
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(303)
 <223> n = A,T,C or G

<400> 403
 cagtatttat agcnaactg aaaaactagt agcaggcaag tctcaaatcc aggcuccaaa 60
 tctaagcaa gagccatggc atggtgaaaa tgcacaaaggc gaglctggcc aatctacaaa 120
 tagagaccaa gacctactca gtcatgaaca aaaaaggcaga ccccaacatg gatctcatgg 180
 gggaatggat attgtaatta tagagcagga agatgcacgt gatcglaatt tggcacaaca 240
 tcttaacaac gaccgaaacc cattatttac ataaacctcc attcggtaac catgttgaaa 300
 gga 303

<210> 404
 <211> 225
 <212> DNA
 <213> Homo sapiens

<400> 404
 aagtgttaact tttaaaaatt tagtgggttt tgaattttct tagaggaaag taaaggaaaa 60
 attgtlaatg cactcattta ccttlacatg gtgaaagltc tctcttgatc ctacaaacag 120
 acattttcca ctggtglltc ctaggttgtt aagtgtatca gclgtgttgg gcatgtgaat 180
 ctcccaagtgc clgtgttaata aakaaagkat ctttatttca ttcct 225

<210> 405
 <211> 334
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(334)
 <223> n = A,T,C or G

<400> 405
 gagctgttat actgtgagtt ctactaggaa atcatcaaat ctgagggttg tctggaggac 60
 ttcaatacac ctcccccac agtgaatcag ctccagggg gtccagtcac tctccttact 120
 tcatcccat cccatgcaaa aggaagaccc tccctccttg gctcacagcc ttctctaggc 180
 ttcccaagtgc ctccaggaca gagtgggtta tgttttcagc tccatccttg ctgtgagtg 240
 ctggtgcggg tctgcctcca gctctgtctc agtgcctcat ggacagtgtc cagcccatgt 300
 cactctccac tctctcannq tggatccac ccc 334

131

<210> 406
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 406
 ttctatacct aatgaggagg ttganatnac atnnaaccag gaaatgcctg gatctcaang 60
 gaaacsaaca cccaataaac tcggagtggt agactgacaa ctgtgagaca tgcacttget 120
 acnaaacaca aatttnatgt tgcacccttg tttctacacc tgtgggttat gacaaagaca 180
 actgccaaag aatnttcaag aaggaggact gccant 216

<210> 407
 <211> 413
 <212> DNA
 <213> Homo sapiens

<400> 407
 gotgacttgc tagtatcaco tgcattcatt gaagcacaag aacttcatgc cttgactcat 60
 gtaaatgcaa taggattaaa aaataaattt gatataccat ggaacacagc aaaaaatatt 120
 gtaaacatt gacccagtg tcagattcta caactggcca ctacaggagc aagagttaat 180
 cccagaggtc tatgtcttaa tgtgtttatg caaatggatg tcatgcaagt accttcattt 240
 ggaaatltg catttgctca tgtgacaglt gatacttatt cacatttcac atgggcaacc 300
 tgcacagacg gagaaggctc loccatgtta aaagacallt attatcttct ttctctgtca 360
 tgggagttcc agaaaaagt c aaacacagca aLgggncagg tctcgtagta aag 413

<210> 408
 <211> 183
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(183)
 <223> n = A,T,C or G

<400> 408
 ggaagctngcc ctcaattcc. ccatntctat gttanccalal tteatgtell ttgnnattea 60
 tncfteacta gtaatectt. aaagggtan ntaatctta actagtcnct ccatlgtgag 120
 cattatectt ccagtattcn ccttctnttt tatttactcc ttcctggcta cccatgtact 180
 ntt 183

<210> 409
 <211> 250
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(250)
 <223> n = A,T,C or G

<400> 409
 cccagcctg ataagutctt latllctgta agtccctqcta ggaatcctc aaatctgacg 60
 gtggtttggg ggaacctgac aacctccctg taatt atca gclltoagtt tctccccccta 120
 gtccctcctt caacacata ggaggalcct cccctcllil ctgctcacag ccttatctag 180
 gcltcccagl gcccacagga cagcgtgggc tatgtttaca ggccttcctt gctggggggg 240
 ggccttatgc 250

<210> 410
 <211> 306
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(306)
 <223> n = A,T,C or G

```
<400> 410
ggctgggtttg caagaatgaa atgaatgatt ctacagctag gacttaacct tgaaatggaa 60
agtcttgcaa tcccatittgc aggatccgtc tgtgcacatg cctctgtaga gagcagcatt 120
cccagggacc ttggaaacag ttggcactgt aaggtgcttg ctccccaa ga cacatcctaa 180
aaggtgttgt aatggtgaaa accgcttcc tctttattgc ccttctta t tatgtgaac 240
nactgggttg ctttttttgn atcttttta aactggaaag ttcaattgng aaatgaata 300
tontgc                                     306
```

<210> 411
 <211> 261
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(261)
 <223> n = A,T,C or G

```
<400> 411
agagatattc cttaggtnaa agttcataga gtcccatga actatatgac tggccacaca 60
ggatcttttg tatttaagga ttctgagatt ttgcttgagc aggatagat aaggtgttc 120
tttaaatgtc tgaatatggaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaata ggctgatggg caaaaaacca atttaccat cagttccayc 240
ctctctcaa gngagggcaa a                                     261
```

<210> 412
 <211> 241
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(241)
 <223> n = A,T,C or G

```
<400> 412
gttcaatgtt acctgacatt totacaacac ccactcacc gatgtattcg ttgccagtg 60
ggaacatacc agcctgaatt tggaaaaaat aattgtgttt cttgccagg aaatactacg 120
actgactttg atggctccac aaacataacc cagtgtaaaa acagaagatg tggaggggag 180
ctgggagatt tcactgggta cattgaattc ccaactacc cangcaatta ccagccaac 240
a                                     241
```

<210> 413
 <211> 231
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(231)
 <223> n = A,T,C or G

133

```

<400> 413
aacctcttaca atccaagtga ctcatctgtg tgcttgaate ctttccactg tctcatctcc 60
ctcatccaaag tttctagtag ctctctcttg ttgtgaagga taatccaacl gaacacccaa 120
aagtttcaact tcttcatttg gaacctaaaa actctcttct tcttgggtct gagggctcca 180
agaatccttg aatcatttct cagatcattg gggaccccan atcagggaac t 231

```

```

<210> 414
<211> 234
<212> DNA
<213> Homo sapiens

```

```

<400> 414
actgtccatg aagcactgag cagaaqctgg aggcacaaag caccagacac tcacagcaag 60
gatggagctg aaaacataac ccactctgtc ctggaggcac tgggaagcct agagaaggct 120
gtgagccaaag gagggagggt ctctcttttg catgggatgg ggatgaagta aggagagggg 180
ctggaccccc tggaaqctga ttactatgg ggggagggtg attgaagtcc tcca 234

```

```

<210> 415
<211> 217
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(217)
<223> n = A,T,C or G

```

```

<400> 415
gcaaggaggt agactgagt atcttttcta cattctttta actttctaaq gggcacttct 60
caaaacacag accaggtagc aaatctccac tgctctaagg ntctcaccac cactttctca 120
cacctagcaa tagtagaatt cagtctact tctgaggcca gaagaatggt tcagaaaaat 180
antggattat aaaaaataac aattaagaaa aataatc 217

```

```

<210> 416
<211> 213
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(213)
<223> n = A,T,C or G

```

```

<400> 416
atgcataatn aaagganact gctctgcttt tagaagacat ctggactgct ctctgcatga 60
ggcacagcag taaagctctt tgattccag aatcaagaac tctcccttc agactattac 120
cgaatgcagg gtggttaatt gaaggccact aattgatgct caaatagaag gatattgact 180
atattggaac agatggagtc tctactacaa aag 213

```

```

<210> 417
<211> 303
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(303)
<223> n = A,T,C or G

```

```

<400> 417
nagtcctcag gcccatcagg gaagttcaca ctggagagaa gtcatacata tgtactgtat 60

```

134

```

gtgggaagg ctttactctg agttcaaate ttcaagccca tcagagagtc cacactggag 120
agaagccata caaatgcaat gagtgtggga agagcttcag gagggatcc cattatcaag 180
ttcatctagt ggteccacaca ggagagaaac cctataaatg tgagatatgt gggaggggct 240
tcantcaagg ttctgtctctt caaatccatc ngaagggncca cagtatanen aaacctttta 300
agt

```

```

<210> 418
<211> 328
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(328)
<223> n = A,T,C or G

```

```

<400> 418
tttttggcgg tgggtggggca gggacgggac angagtctca ctctgttgcc caggctggag 60
tgcacaggca tgatctcggc tcaactacaac cctgtccctcc catgtccaag cgattcttgt 120
gectcagcct tccctgtagc tagaattaca ggcacatgcc accacaccca gctagttttt 180
gtatttttag tagagacagg gtttcacccat gttggccagg ctggtctcaa actcctnacc 240
tcagnggtca ggctggcttc aaactcctga cctcaagtga tctgccacc tcagcctccc 300
aaagtgtan gattacaggc cgtgagcc

```

```

<210> 419
<211> 389
<212> DNA
<213> Homo sapiens

```

```

<220>
<221> misc_feature
<222> (1)...(389)
<223> n = A,T,C or G

```

```

<400> 419
cctcctcaag acggcctgtg gtcgcctcc cggcaaccaa gaagcctgca gtgccatag 60
acccctgagc catggactgg agcctgaaag gcagcgtaca cctgtctcct gatcttgtg 120
cttgtttcct ctctgtggct ccattcatag caagtttgtt gcactgagge ttgtgcagge 180
cgagcagggc caagctggct caaagagcaa ccagtcact ctgucacggg gtgccaggca 240
cgggtctcc agccaccaa ctcactcgct cccgcaaagt gcacatcagt tctctaccc 300
taaaggtagg accaaagggc atctgctttt ctgaagtecl ctgtctctat agccatcag 360
tggcagccac tgggctgtg tggcagcg

```

```

<210> 420
<211> 408
<212> DNA
<213> Homo sapiens

```

```

<400> 420
gttctctcta actcctgcc aaaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgactttggg gtttcggcat ggagaccgaa 180
gtccatttga cacttttccc actgacccca taaagggaat ctcatggcca caaggatttg 240
gccaaactcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccctata aacatgaaca ggttttatatt cgaagcacag 360
acgttgaccg gactttgatg aagtgtctat acnaacctgg caagcccg 408

```

```

<210> 421
<211> 352
<212> DNA
<213> Homo sapiens

```

```
<400> 421
gctc0000aat ctttttactg atnnggcattg ctacacaatc attgactatt acggaggcca 60
gaggagaatg 0ggcctggcc tgggagccct gtgcctacta naagcacatt agattatcca 120
ttcactgaca gaacagggtc tttttgggtc cttcttctcc accacnatat acttgcagtc 180
ctccttcttg aagattcttt ggcagttgtc ttgtgcatga cccacagggtg tagaacaag 240
ggtgcacatt gaaatttctg ttctgtagca atgtgatgca tccacaagttg gcangtctgc 300
cactccgagt ttattgggtg tttgtttcct ttgatgcca tgcatttctt gg 352
```

```
<210> 422
<211> 337
<212> DNA
<213> Homo sapiens
```

<400>	422						
atgccaccat	gctggcaatg	cagcggggcg	tcgaaaggcct	gcataatccag	cccaagctgg	60	
cgatgatcga	cggcaaccgt	tgcccgaaat	tgcctgatgcc	agccgaagcg	gtggtcaagg	120	
gcgatagcaa	ggttgcggcg	atcgcggcg	cgtcaatcct	ggccaaggctc	agccgtgatc	180	
gtgaaatggc	agctgtcgaa	ttgatctacc	cgggttatgg	cattcggcggg	cataagggct	240	
atccgacacc	ggtgtacctg	gaagccttgc	cgcggtctgg	gccgacgccg	attcacccgac	300	
gcttcttccg	ccggtaccgg	lggcctatga	aaatttat			337	

```
<210> 423
<211> 310
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> {1}...{310}
<223> n = A,T,C or G
```

```

<400> 423
gctcaaaant ctttttacty atctggcctg qctacacaat caktgactat tagaggncag 60
aggagaatga ggcctggccl gggaagccctg tgcctactan aagcncetta gattatccat 120
tcactgacag aacagglectt ttttgggtcc ttctttctca aacagatata cttgcngtcc 180
tcctttcttg agattctttg gcagttgtct ttgtcataac ccacaggtgt anaaacaagg 240
gtgcacacat aatttctctg ttctgtagcaa ttgcatgtct cacagttgtc aagtcctgcc 300
tcagagttta                                     310

```

```
<210> 424
<211> 370
<212> DNA
<213> Homo sapiens
```

```
<220>
<221> misc_feature
<222> (1)...(370)
<223> D = A,T,C or G
```

<400>	424						
gctcaaaaat	cttttlaetg	ataggusttg	ctacacaaac	attguataat	agaggccaga	60	
ggagaatgag	gcctgguctg	ggagccctgt	gcctactaga	agcacatkaa	attalocati	120	
cactgacaga	acaggtcllt	tttgggtccl	tcttctccac	cacgatatcc	ttgcagtcct	180	
ccttccttga	gattcttttg	caglttgctt	tgtcalaaac	cacagggtga	gaacatcct	240	
ggttqaatct	cctggaactc	cctcattagg	latgaatcag	cctgatgcac	tgnataaagt	300	
cacgaagctg	gcaaatgatc	caacgctgcn	cagganaaaca	ttcatttgtg	taagcaggac	360	
tcacacgaacg						370	

136

<210> 425
 <211> 216
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(216)
 <223> n = A,T,C or G

<400> 425
 aattgctatn ntttattttg ccactcaaaa taattacca aaaaaaaaaa tnttaaata 60
 taaccaacna acatcaaggn aaananaaa ggaatggntg actntgcata aatnggcoga 120
 anattatcca ttatnttaag ggttgacttc aggtacagc acacagacaa acatgcccag 180
 gaggntntca ggaccgctcc atgtnttntg aqgagg 216

<210> 426
 <211> 596
 <212> DNA
 <213> Homo sapiens

<400> 426
 ctccagtgga ggataaccct gttgccccgg gccgaggttc tccattagge Lclgattgat 60
 tggcagtcag tgatggaagg gtgttctgat cttccgact gccccagggt tgcctggcca 120
 gctctctgtt ttgctgagtt ggcagtagga cctaatttgt taattaagag tagatggtga 180
 gctgtccttg tattttgatt aacctaatgg ccttcccagc acgactcga ttcagctgga 240
 gacatcaagg caacttttaa tgaaatgatt tgaaggggca ttcccgta 300
 ttaggcagtt catctgcact gataaactct tggcagctga gctggtcga gctgtggccc 360
 aaacgcacac ttggtttttg gttttgagat acaactctta atcttttagt catgcttgag 420
 ggtgagtgga cttttcagct ttaccacct ttgcactgcc ttggaagtgt agccaggaga 480
 atacactcat atactcgtg gctcagagga cacagcaqat gtcattggtc tactgocitga 540
 gtcccgctgg Lcncatccca ggaccltcca cggcgagga cctgggagcc cgtgct 596

<210> 427
 <211> 107
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(107)
 <223> n = A,T,C or G

<400> 427
 gaagaattca agttaggttt attcaagggt cttacngaga atccatanacc caggncaccag 60
 cccgggaqca gecttanaga gctcctgttt gautgccccg ctcagng 107

<210> 428
 <211> 38
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(38)
 <223> n = A,T,C or G

<400> 428
 gaacttcena anaangaatt tattcaactat ttacatt

38

<210> 429

137

<211> 544
 <212> DNA
 <213> Homo sapiens

<400> 429
 ctttgctgga cgggaataaaa gtggacgcaa gcatgaccto ctgaltgagg cgcctgcatt 60
 attgaagagc ggctgcagcc ctgagggttc gattaanaac cgggattgt alagacgccg 120
 atatccacga actcttgaag gactttctga tttatccaca atcaaatcat cggttttcag 180
 tttggatggt ggctcatcac ctgtagaacc tgaattggcc gtggctggaa tccactcgtt 240
 gccttccact tcagttacac ctactcacc atccctcctt gttgggtctg tgcctctca 300
 agatactaag cccacatttg agatgcagca gccatctccc ccaattcttc ctgtccatcc 360
 tgatgtgcag ttaaaaaatc tgcclltta tgatglectt gatgttctca tcaagccac 420
 gaggtttagt caaagcagta ttcagcatt tcaaggagaag ttttttattt ttgctttgac 480
 acctcaacaa gttagagaga tctgcctatc cagggatatt ttgccagggt gtaggagaga 540
 ttat 544

<210> 430
 <211> 507
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(507)
 <223> n = A,T,C or G

<400> 430
 cttatcncaa tggggctccc aaacttggct gtgcagtga aautccgggg gaattttgaa 60
 gaacactgac aacctcttc caccocgaca ctctgattta altgggctgc aglgagaaca 120
 gagcatcaat ttataaagct gccagagtg tntctctgg cagcgttgtg atctttgccn 180
 ccttctgac tttatgcaat gcatcatgct attcatacc taatgaggga gttccaggag 240
 attcaaccag gatglllcta cncctgtggg ttatgacaaa gacaactgcc aaagaatntt 300
 caagaaaggag gactgcaggt atatcgtggt ggagaagaag gacccaaaaa agacctgttc 360
 tctcagtgaa tggataatct aatgtgcttc tagtaggcac agggctccca ggccaggoot 420
 cattctcttc tggcctctaa tagtcaatga ttgtgtagcc atgcctatca gtaaaaagat 480
 (tttgagcaa aaaaaaaaaa aaaaaaa 507

<210> 431
 <211> 392
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(392)
 <223> n = A,T,C or G

<400> 431
 gaaaattcag aatggatgaa aacaaatgaa gtacaaaata tttcagattt acatagcgat 60
 aaaaagaaa gcaatttcca ggaggactta caaatggaag tacactctan aacctatc 120
 tatcatggct aaatgtgaga ttagcacagc tgtattattt gtacattgca aacacctaga 180
 aagagatggg aaaaaaatc ccaggagttt tgtgtgtgga gtctgggtt ttccaacaga 240
 catcattcra gnatcttgg attaggngga ttggggatca ttctggagtt ggaatgttca 300
 acaaaagtga tgttgttagg taaaatgtac aacttctgga tctatgcaga cattgaaggt 360
 gcaatgagtc tggcttttac tctgctgttt ct 392

<210> 432
 <211> 387
 <212> DNA
 <213> Homo sapiens

<220>

138

<221> misc_feature
 <222> (1)...(387)
 <223> n = A,T,C or G

<400> 432
 ggtatccta ctaaatcaaa tatagctgta gtacatgttt tcattggngt agattaccac 60
 aatgcgaagg caacatgtgt agatctcttg tottattctt ttgtctataa tactgtattg 120
 ngtagtccaa gctctcggna gtccagccac tngaaacat gctcccttta gattaaacct 180
 gtggacnctn ttgttgnaatt gtctgaactg tagngccctg tatcttgctt ctgtctgnga 240
 attctgttgc ttctggggca tttccttgng atgcagagga ccaccacaca gatgacagca 300
 atctgaattg ntccaatcac agctgcgatt aagacatact gaaatcgtac aggaccggga 360
 acaacgtata gaacactgga gtccctt 387

<210> 433
 <211> 281
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(281)
 <223> n = A,T,C or G

<400> 433
 ttcaacbaagc anagaanaact gcttcagggn gtgtaaaatg aaaggcttcc acgcagttat 60
 ctgattcaag aacactaaga gagggacaag gctagaagcc gcaggatgtc tactctatag 120
 caggcncctat ttgggttggc tggaggagct gtggaaaaca tggagagatt ggcgctggag 180
 atcgccgtgg ctattcctcn ttgntattac accagngagg ntctctgtnt gccactggt 240
 tnnaaaaccg ntatacaata atgatagaat aggacacaca t 281

<210> 434
 <211> 484
 <212> DNA
 <213> Homo sapiens

<400> 434
 ttttaaaata agcatttagt gctcagtcce tactgagtag tctttctctc ccctcctctg 60
 aatccaattc tttcaacttg caatttgcaa ggattacaca tttaactgtg atgtatattg 120
 lgttcgcaaa aaaaaaaagt gtctttgttt aaaattactt gggttggtga tccatcttgc 180
 tttttcccc ttggaactag tcattaaccc atctctgaac tggtagaaa acatctgaag 240
 agctagtcta tcagcatctg acaggtgaat tggatggttc tcagaaccat ttcaaccaga 300
 cagcctgttt ctatcctgtt taataaatta gtttggttc tctacatgca taacaaacc 360
 tgcaccaate tgtcacataa aagtctgtga cttgaagttt agtcagcacc cccaccaaac 420
 tttatttttc tatgtgtttt ttgcaacata tgagtgtttt gaaaataaag taccatgtc 480
 tttta 484

<210> 435
 <211> 424
 <212> DNA
 <213> Homo sapiens

<400> 435
 ggcgcgctca gagcaggtna ctttctgect tccacgtcct ccttcaagga agccccatgt 60
 ggttagcttt caatatcgca ggttcttact cctctgcctc tataagctca aaccaccaa 120
 cgatcgggca agtaaacccc ctccctcgcc gacttcggaa ctggcgagag ttcagcgag 180
 atgggcctgl ggggaggggg caagatagat gagggggagc ggcatggtgc ggggtgacc 240
 cttggagaga ggaaaaaggc cacaagagg gctgccaccg ccactaacgg agatggccct 300
 ggtagagacc tttgggggtc tggaaacctt ggactcccca tgccttaact ccacactct 360
 gctatcagaa acttaaacctt gaggattttc tctgttttcc actcgcaata aattcagagc 420
 aacc 424

<210> 436

<211> 667
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(667)
 <223> n = A,T,C or G

```

<400> 436
accttgggaa nactctcaca atataaaggg tcttagactt tactccaat tccaaaaagg 60
tcctggccat gtaatcctga aagttttccc aaggtagcta taaaatcctt atagggtctc 120
agcctctctt ggaattcctc tgatttcaaa gtctcactct caagttcttg aaaaaggagg 180
cagttcctga aaggcaggta tagcaactga tcttcagaaa gaggaactgt gtgcacaggg 240
atgggctgcc agagtaggat aggtatccag atgtcgacac ctcttggggg aaacagggct 300
gccaggtttg tcatagcact catcauagtc cagtcacagt ctgtgcltgc aalataaacc 360
tgttcatgtt tataggactc attcaagaat lltctatata tctttcttat atactctcna 420
agttcataat gctgctccat gccagctggg gtyagttggc caaatccttg tggccatgag 480
gattccctta tggggtcagt gggaaaagtg lcaatgggac ttcggtctcc atgccgaacc 540
accaagtcga caaucttcaa ctecttggtc agtacctc ccgtctagcca gaasaaaagc 600
agaaacanga agccaaggcl aaggcltgc gccctgccag gagggagggt gcagctctca 660
tgttgag 667
  
```

<210> 437
 <211> 693
 <212> DNA
 <213> Homo sapiens

```

<400> 437
ctacgtctca accctcatrt ttaggtaagg aatcttaagt ccaagatat taagtgaact 60
acacagccag gtaaggaaag ctgyattggc acnctaggac tctaccatac cgggttttgt 120
taaagctcag gttaggaggc tgataagctt ggaagggaat tcagacagct ttttcagatc 180
ataaaagata attcttaguc catgttcttc lccagagcag acctgaactg acagcacago 240
aggtactcct ctattttcac cctcttggct tolactclcl ggcagtcaga cctgtgggag 300
gccatgggag aaagcagctc tctggatglt tgtacagatc atggactatt ctctgtggac 360
cattctcuaa ggttaacctc ggtgtcacta ttggggggac agccagcatt tttagcttcc 420
atttgagltt ctgtctgtcl ttagtagagg aaacttttgc tcttcacact tcacatctga 480
acaccleant gctgttgctc ctgaggtggc gaaagacaga tatagagctt acagtattta 540
tactatttct aggcactgag ggctgtgggg taccttgttg tgccaaaaca gatcctgttt 600
taaggacatg ttgcttcaga gatgtotga actatctggg ggctctgttg gctctttacc 660
ctgcacatg tgctctcttg gctgaaaatg acc 693
  
```

<210> 438
 <211> 360
 <212> DNA
 <213> Homo sapiens

```

<400> 438
ctgcttatca caatgaatgt tctcttgggc agcgttctga tcttlgcccac ctctgtgact 60
ttatgcaatg catcatgcta ttccatcccl aatgggggag ttccaggaga ttcaaccagg 120
atgtctctac acctgtgggt tatgacaaag ccaactgcca aagaatcttc aagaaggagg 180
actgcaagta tatctggtgg agagagagga accaaaaag acctgttctg tcagtgaatg 240
gataatctaa tgtgcttclg gtaggcacag ggctcccagg ccaggcctca ttctcctctg 300
gcctctaata qtcaataatt qcttagccat gccctcagc aaaaagattt ttgagcaaac 360
  
```

<210> 439
 <211> 431
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

140

<222> (1)...(431)

<223> n = A, T, C or G

<400> 439

```

gttctctnnta actcctgcca gaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgg gtctcggcat ggagaccgaa 180
gtcccatgga caccctttccc actgacccca taaggaate ctcatggcca caaggatttg 240
gccaaetcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgcg 420
aatttagtag t

```

431

<210> 440

<211> 523

<212> DNA

<213> Homo sapiens

<400> 440

```

agagataaag cttaggtcaa agttcctaga gttcccatga actatctgac tggccacaca 60
ggatcttttg tatttaagga ttctgaagat ttgcttgagc aggtatcgat aaggctgttc 120
tttaaatgtc tgaatatgaa cagatttcaa aaaaaaaccc cacaatctag ggtgggaaca 180
aggaaggaaa gatgtgaaia ggcctgatgg caaaaaacca atttaccat cagttccagc 240
cttctctcaa ggcggggcaa agaaaggaga tacagtggag acatctggaa agttttctcc 300
actggaaaaa tgctactatc tgtttttata tttctgttaa aatatatgag gctacagaac 360
laaaaaatca aacctctttg tgtcctttgg tcttggaaaca tttatgttcc ttttaagaa 420
acaaaaatca aactttacag aaagatttga tgtatgtaac acatatagca gctcttgaag 480
tatatatatc atagcaataa agtcatctga tgagaacaag cta

```

523

<210> 441

<211> 430

<212> DNA

<213> Homo sapiens

<400> 441

```

gttctctcta actcctgcca gaaacagctc tcttcaacat gagagctgca cccctcctcc 60
tggccagggc agcaagcctt agccttggct tcttgtttct gctttttttc tggctagacc 120
gaagtgtact agccaaggag ttgaagtttg tgacttttgg gtctcggcat ggagaccgaa 180
gtcccatgga caccctttccc actgacccca taaggaate ctcatggcca caaggatttg 240
gccaaetcac ccagctgggc atggagcagc attatgaact tggagagtat ataagaaaga 300
gatatagaaa attcttgaat gagtccctata aacatgaaca ggtttatatt cgaagcacag 360
acgttgaccg gactttgatg agtgctatga caaacctggc agcccgctga cgcggccgcg 420
aatttagtag

```

430

<210> 442

<211> 362

<212> DNA

<213> Homo sapiens

<400> 442

```

ctaagggaatt agtagtgttc ccatcacttg ttggagtgct gclattctaa aagattttga 60
tttcttggaa tgacaattat attttaactt tgggtgggga aagggttata ggaccacagt 120
cttcaattct gatacttgta aattaatctt ttatctgact tgttttggcc attaagctat 180
atgttttagaa atggtcattt ttcggaaaaa ttgagaaeat tctgataata gtgcagaata 240
aatgaattaa tgttttactt aatttataat gaactgtcaa tgacaaataa aaattctttt 300
tgattatttt ttgttttcat ttaccagaat aaaaactaag aattaaaagt ttgattacag 360
tc

```

362

<210> 443

<211> 624

<212> DNA

<213> Homo sapiens

141

<220>
 <221> misc_feature
 <222> (1)...(624)
 <223> n = A,T,C or G

```

<400> 443
tttttttttt gcaacacaaat atacatcaca gtgaaatgtg taatccttgc aaattgcaag 60
ttgaaagaat taaattcaga ggaggggaga gaaagagtac tcagtaggga ctgagcacta 120
aatgcttatt ttaaaagaaa tgtaaagagc agaaagcaat tcaggctacc ctgccttttg 180
tgctggctag tactccggtc ggtgtcagca gcacgtggca ttgaacattg caatgtggag 240
cccaaacccac agaaaatggg gtgaaatttg ccaactttct attaacttgg cttectgttt 300
tataaatat tgtgaatnat atcacctact tcaaagggca gttatgaggc ttaaatgaac 360
taacgcctac aaaaacacta aacatagata acataggtag aagtactatg tatctggtac 420
atggtaaaaca tccttattat taaagtcaac gctaaaatga atgtgtgtgc atatgcta 480
agtacagaga gagggcactt aaaccaaata agggcctgga ggggaaggtt cctggaaaga 540
ngatgcttct gctgggtcca aatcttgggc tactatgacc ttggccaaut tatttaaa 600
ttgaccctat ctgctaaca gata 624

```

<210> 444
 <211> 425
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(425)
 <223> n = A,T,C or G

```

<400> 444
gcacatcatt nntcttgcct tctttgagaa taagaagatc agtaaatagt tcagaagtgg 60
gaagctttgt ccaggccctg gtgtgaaccc aatgttttgc ttagaatatg aacaaagtaa 120
ttcattgcta tagcataaca caaaatttgc ataagtgttg gtacgcaaat ccttgaatgc 180
tgcttaatgt gagaggttgg taaaatcccl tgtgcaacac tctaactccc tgaatgtttt 240
gctgtgctgg gacclgtgca tgccagacaa ggcacagctg gctgaaagag caaccagcca 300
cctctgcaat ctgccacctc ctgctggcag gatl.tgtttt tgcclccclg gaagagccaa 360
ggaggcacca gggcataagt gagtacactt atggtccagc cggccgcgaa tttagtagta 420
gtaga 425

```

<210> 445
 <211> 414
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> (1)...(414)
 <223> n = A,T,C or G

```

<400> 445
catgtttatg nttttggalt actttggqca cctagtgttt ctaaatcgte tatcatcttt 60
ttctgttttt caaaagcaga galggccaga gtclcaacaa actgtatctt caatcttttg 120
tgaattcttt tgcattgtgc agattcttgg atgtagtttc ctttaactag catataaata 180
tggtgtgttt cagataaatg aacagcaaaa tgttgttggaa ttaccatttg gaacattgtg 240
aatgaaaaat tgtgtctcta gatlatglaa caaatcaata tttaactaac attgatcttt 300
ggatttttat aatcctactc ecaaatgaat aggcctctcc tottgtattt tgaagcagtg 360
tggtgtgtgg attgataaaa aaaaaaaagc tggcgcgcgc cgggaattta gtag 414

```

<210> 446
 <211> 631
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{631}
 <223> n = A,T,C or G

<400> 446
 acaaatagga anaaagtggc agagaacacc acataccttg tccggaacat tacaatggct 60
 totgcattgca tgggaagtgt gaggattcta tcaatatgca ggagccatct tgcagggtgtg 120
 atgotgggta tactggacaa cactgtgaaa aaaaggacta cagtgttcta tacgttgttc 180
 cuggtcctgt acgatattcag tatgtcttaa tccgagctgt gattggaaac attcagattg 240
 ctgtcatctg tgtgggtgtc ctctgcatac caaggggcaa actttaagta atagcattgg 300
 actgagattt gtaaacattc caaccttcca ggaattggcc cagaagcaac aqaattcaca 360
 gacagaagca aatcacaggc cactacagtt cagacaatac aacaagagcg tccacgagggt 420
 taatctaaag ggagcatgtt tccagtggtc lggactcccg agagcttggc clacacaata 480
 cagttattat gacaaagaa caagcaaga gatctacaca lgttgcttg cetttgttgt 540
 aatclacacc aakgaagca tgtactacag ctatatttga ttctgtatgg atatatttga 600
 aatagtatac attgtcttga tgtttttct g 631

<210> 447
 <211> 585
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{585}
 <223> n = A,T,C or G

<400> 447
 ccttgggaas antntacaa ctataagggt ggtagacttt actccaaatt ccaaaaaggt 60
 cctggccatg taalactgaa agttttccca aggtagctat aaatccctta taagggtgca 120
 gccctctctg gaattcctct gatttcaaag tctcactctc aagticttga aaacgagggc 180
 agttcctgaa aggcagggtat agcaactgat ctccagaaag aggaactgtg tgcaccggga 240
 tgggctgcca gaggtaggata ggattccaga tgcctgacac ttctggggga aacagggctg 300
 ccaggtttgt catagcactc atcaaagtcc ggtcaacgtc tgtgcttcga atataaacct 360
 gttcatgttt ataggactca ttcaagaatt ttctatatct ctttcttata tactctccaa 420
 gttcataatg ctgtcccatg cccagctggg tgagttggcc aaatccttgt ggccatgagg 480
 attcctttat ggggtcagtg ggaaagggtg caatgggact tcggtctcca tgcggaaca 540
 ccaaagtcac aaacttcaac tccttggcta gtacacttg gtcta 585

<210> 448
 <211> 93
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature
 <222> {1}...{93}
 <223> n = A,T,C or G

<400> 448
 tgcctgtggg tcattctgan nncogaactg acctgtccag cctgtccgan gggcconccat 60
 ggctccctag tgcctgtggg agganggggc tag 93

<210> 449
 <211> 706
 <212> DNA
 <213> Homo sapiens

<220>
 <221> misc_feature

143

<222> (1)...(706)

<223> n = A,T,C or G

<400> 449

```

ccaagtccat gctntgtgct ggacgctgga caggggggcaa aagcnmttgc tctgtgggtca 60
ttctgancac cgaactgacc atgccagccc tgcgatggt cctccatggc tccctagtgc 120
cctggagagg aggtgtctag tcagagagta gtcttggaaq gtggcctctg ngaggagcca 180
cggggacagc atcctgcaga tggtcyggcg cgtcccatcc gccattcagg ctgcgcact 240
gttgggaagg gcgatcggcg cgggctctct cgtctattac ccagclggcg aaagggggat 300
gtgctgcaag gcgatteeat tgggtaacgc cagggttllc ccagtcnega cgttgtaaaa 360
cgacgguccg tgaattgaal ctaggcgacn ctatagaaga gctatgacgt cgcctgcaac 420
cgtacgttae cllggatcct cttaggcggc cggctactac tectaaattc gcggccggct 480
cgacclgggg tccnccactg gagagtggag agtgacatgt gctggacnct gtccatgaag 540
cactgacacg aagctggagg cacaacgcnc cagacactca cagctactca ggaggctgag 600
aocaggttga accctggagg tggaggttgc aatgagctga gatcaggccn ctgcncacca 660
gcctggatga cagagtgaas ctccatctta aaaaaaaaaa aaaaaa 706

```

<210> 450

<211> 493

<212> DNA

<213> Homo sapiens

<400> 450

```

gagacggagt gtcaactctgt tgcccaggct ggagtgcagc aagacactgt ctaagaaaaa 60
acagttttta aaggtaaaac aacataaaaa gaaatatcct atagtggaaa taagagagtc 120
aaatgaggct gagaacttta caaaggagtc ttacagacut gtgcgaata tcaactgcac 180
agcctaagta taagaacaa ctttggggag aaccctcat ttgacagtga ggtacaaatt 240
caagtcagggt agtgaaatgg gtggcaattaa actcaaatla atcctgccag ctgaaagcca 300
agagacactg tcagagagtl aaaaaagtgg ttctatccat ggggtgattc cccagttctc 360
tcagtcacac acatctgtga actcacagac caagttctla aaccactgtt ccaactctgc 420
lacacatcag aatcacctgg agagctttac aaactcccat tgccgagggt cgacgcggcc 480
gcgaatttag tag 493

```

<210> 451

<211> 501

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(501)

<223> n = A,T,C or G

<400> 451

```

gggcggctcc cactggccal tcaggctgcy caactgttgg gaaggggcat cggctgcgggc 60
ctctlcccta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt 120
aacgccaggg ttttccagtc cncgacgttg taaaacgacg gccagtgaat tgaatttagg 180
lgacnctata gaagagctat gacgtcgcat gcacgcgtac gtaagcttgg atcctctaga 240
ggggccggct actactacta aattcgcgyc cgcgtcgacg tgggatccnc actgagagag 300
tggagagtga catgtgctgg acnctgtcca tgaagcactg agcagaagct ggaggacaaa 360
cgcnccagac actcacagct actcaggagg ctgagaacag gttgaacctg ggaggtggag 420
gttgcaatga gctgagatca ggccnctgcn cccagcatg gatgacagag tgaactcca 480
tcttaaaaaa aaaaaaaaaa a 501

```

<210> 452

<211> 51

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1)...(51)

144

<223> n = A,T,C or G

<400> 452

agacgggttc acenttiacaa cnccttttag gatgggrntt ggggagcaag c 51

<210> 453

<211> 317

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<222> (1) ... (317)

<223> n = A,T,C or G

<400> 453

tacatcttgc	tttttcccca	ttggaactag	tcattaaccc	atctctgaac	tggtagaaaa	60
acatctgaag	agctagtcta	tcagcatctg	gcaagtgaat	tggatgggtc	tcagaacct	120
ttcaccana	cagcctgttt	ctatcctgtt	taataaatta	gtttgggttc	tctacatgca	180
taacaaaccc	tgctccaatc	tgtcacataa	aagtctgtga	cttgaaagttt	antcagcacc	240
cccaccaaac	tttatttttc	tatgtgtttt	ttgcaacata	tgagtgtttt	gaaaaataagg	300
tacctatgc	tttatta					317

<210> 454

<211> 231

<212> DNA

<213> Homo sapiens

<400> 454

ttcagaggtac	aatcaactct	cagagtgtag	tttccttcta	tagatgagtc	agcatttaata	60
taagccacgc	cacgctcttg	aaggagtctt	gaattctcct	ctgctcaactc	agtagaacca	120
agaagaccaa	attcttctgc	atcccagctt	gcaaacaaaa	ttgttctctc	aggtctccac	180
ccttcctttt	tcagtgttcc	aaagctcttc	acaatttcat	gaacaacagc	t	231

<210> 455

<211> 231

<212> DNA

<213> Homo sapiens

<400> 455

taccaaagag	ggcataatna	tcagtctcac	agtaggggttc	accatcctcc	aagtgaaaaa	60
cattgttccg	aattgggttt	cccccgggcl	cacacacaaa	acaggaaaca	tgccaagttt	120
gttccacgc	attgatgact	lctcccaggc	tcttcctttg	gcacgacca	cattcagggg	180
caaaagattt	clcatagcac	agctcacaat	acagggctcc	tttctcctct	a	231

<210> 456

<211> 231

<212> DNA

<213> Homo sapiens

<400> 456

ttggcaggtg	cccttacaaa	gaagacacca	tacottatgu	gttattaggt	ggaataatca	60
ttccattcag	tattatogtt	attattcttg	gagaaacccct	gtctgtttac	tgtaaccttt	120
tgcactcaa	ttcctttatc	aggaataact	acatagccac	tattttacaa	gcatttgga	180
cctttttatt	tggtgcagct	gctagtcagt	ccctgactga	cattgccaag	t	231

<210> 457

<211> 231

<212> DNA

<213> Homo sapiens

<220>

145

<221> misc_feature
 <222> {1}...{231}
 <223> n = A, T, C or G

<400> 457
 cgaggtaccc aggggtctga aaatctctnn ttiantagtc gatagcaaaa ttgttcatca 60
 gcattcctta atatgatctt gctataatta gatttttctc cattagagtt catcacgttt 120
 tatttgattt tattagcaat ctctttcaga agacccctga gatcattaag ctttqtatcc 180
 agttgtctaa atogatgoot catttctctt gaggtgtcgc tggcttttgt g 231

<210> 458
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 458
 aggtcttggtt ccccccaactt ccaactccctt ctactctctc taggaactggg ctgggcraag 60
 agaagagggg tggttagggg agccgttgag accggaagcc ccacctcta ccttccctca 120
 acacccctac cttgggtaac agcatttgga attatcatt gggatgagta gaatttccaa 180
 ggtcctgggt tagacatttt gggggggccag accccaggag aagaagattc t 231

<210> 459
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 459
 ggtaccgagg ctctgtgaca cagagaaaac ccaacggcag gaanggaatg gccagccaca 60
 ccttcgcgaa acctgttggt gccaccaggt cctaaaggga caggacagag agacagagca 120
 gccctgcact gttttccctc caccacagcc atcctgtccc tcattggntc tgtgctttcc 180
 actatacaca gtcaacgttc caatgagaaa caaggaaggag caccctccac a 231

<210> 460
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 460
 gcaggtataa catgctgcaa caacagatgt gactaggaac ggccgggtgac atggggaggg 60
 cctatcacc cttctctggg ggctgcttct tcacagtgt catgaagcct agcagcaaat 120
 cccacctccc cacaagcaca cggccagcct ggagccaca gaagggtcct cctgcaquca 180
 gtggagcttg gtccagcctc cagtcacccc ctaccaggct taaggataga a 231

<210> 461
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 461
 cqaggtttga gaagctctaa tgtgcagggg agccgagaag caggcggcct agggagggtc 60
 gcgtgtgtct cagaagagtg tgtgcatgcc agaggggaaa caggcgccctg tgtgtcctgg 120
 gtggggttca gtgaggagtg ggaaattggt tcagcagaac caagccgttg ggtgaataag 180
 agggggattc catggcactg atagagccct atagtttcag agctgggaat t 231

<210> 462
 <211> 231
 <212> DNA
 <213> Homo sapiens

<400> 462
 aggtaccctc attgtagcca tgggaaatt gatgttcagt ggggatcagt gaattaaatg 60
 gggtcagtca agtataaaa ttaaaaaaa aagaatllcat gcccaatctc atatgatgtg 120

146

gaagaactgt tagagagacc aacagggtag tgggttagag atttccagag tcttacattt 180
tctagaggag gtatttaatt tcttctcaat catccagtgt tgtatttagg a 231

<210> 463

<211> 231

<212> DNA

<213> Homo sapiens

<400> 463

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catttgacag gtgtcttttc ctctggacct cgggtgtccc atctgagtga gaaaaggcag 180
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<210> 464

<211> 231

<212> DNA

<213> Homo sapiens

<400> 464

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cctgcttcag tgactgtgt cclgtagtc cagctactcg ggagtctgtg tgaggccagg 180
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<211> 231

<212> DNA

<213> Homo sapiens

<400> 465

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aggatggcag aatttttgt tgtgttcata atatactcag attagttcag ctccatcaga 180
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<211> 231

<212> DNA

<213> Homo sapiens

<400> 466

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<210> 467

<211> 311

<212> DNA

<213> Homo sapiens

<400> 467

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gcctgggtct ctgcacagc lcgtaatgag actatagcaa ggcggctgtg ggacgtcagt 240
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<210> 468

<211> 3112

<212> DNA

<213> Homo sapiens

<400> 468

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<210> 469

<211> 2229

<212> DNA

<213> Homo sapiens

<400> 469

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<210> 470

<211> 2426

<212> DNA

<213> Homo sapiens

<400> 470

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149

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<210> 471

<211> 812

<212> DNA

<213> Homo sapiens

<400> 471

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<210> 472

<211> 515

<212> DNA

<213> Homo sapiens

<220>

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<223> n = A,T,C or G

<400> 472

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caatcaggat attgaacctg gacaagagag agaaggaa cctccgatcg aageacgtaa 240

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150

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cattgaaaat gtgactgaaa attgaaaat tctctcaata aagtttgagt tttctctgaa 480
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<210> 473

<211> 750

<212> PRT

<213> Homo sapiens

<400> 473

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Phe Leu Leu Gly Phe Leu Phe Gly Trp Phe Ile Lys Ser Ser Asn Glu
      35              40              45
Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala Phe Leu Asp Glu
      50              55              60
Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu Tyr Asn Phe Thr Gln Ile
      65              70              75              80
Pro His Leu Ala Gly Thr Glu Gln Asn Phe Gln Leu Ala Lys Gln Ile
      85              90              95
Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His
      100             105             110
Tyr Asp Val Leu Leu Ser Tyr Pro Asn Lys Thr His Pro Asn Tyr Ile
      115             120             125
Ser Ile Ile Asn Glu Asp Gly Asn Glu Ile Phe Asn Thr Ser Leu Phe
      130             135             140
Glu Pro Pro Pro Pro Gly Tyr Glu Asn Val Ser Asp Ile Val Pro Pro
      145             150             155             160
Phe Ser Ala Phe Ser Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr
      165             170             175
Val Asn Tyr Ala Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met
      180             185             190
Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val
      195             200             205
Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly
      210             215             220
Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys
      225             230             235             240
Ser Tyr Pro Asp Gly Trp Asn L u Pro Gly Gly Gly Val Gln Arg Gly
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		305				310					315				320
Gly	Ser	Leu	Lys	Val	Pro	Tyr	Asn	Val	Gly	Pro	Gly	Phe	Thr	Gly	Asn
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Thr	Arg	Ile	Tyr	Asn	Val	Ile	Gly	Thr	Leu	Arg	Gly	Ala	Val	Glu	Pro
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Asp	Arg	Tyr	Val	Ile	Leu	Gly	Gly	His	Arg	Asp	Ser	Trp	Val	Phe	Gly
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Gly	Ile	Asp	Pro	Gln	Ser	Gly	Ala	Ala	Val	Val	His	Glu	Ile	Val	Arg
		385				390					395				400
Ser	Phe	Gly	Thr	Leu	Lys	Lys	Glu	Gly	Trp	Arg	Pro	Arg	Arg	Thr	Ile
				405					410					415	
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Glu	Trp	Ala	Glu	Glu	Asn	Ser	Arg	Leu	Leu	Gln	Glu	Arg	Gly	Val	Ala
		435					440					445			
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			500					505					510		
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Ala	Gln	Val	Arg	Gly	Gly	Met	Val	Ph	Glu	Leu	Ala	Asn	Ser	Il	Val
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152

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 Asp Lys Ile Tyr Ser Ile Ser Met Lys His Pro Gln Glu Met Lys Thr
 610 615 620
 Tyr Ser Val Ser Phe Asp Ser Leu Phe Ser Ala Val Lys Asn Phe Thr
 625 630 635 640
 Glu Ile Ala Ser Lys Phe Ser Glu Arg Leu Gln Asp Phe Asp Lys Ser
 645 650 655
 Asn Pro Ile Val Leu Arg Met Met Asn Asp Gln Leu Met Phe Leu Glu
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 Arg Ala Phe Ile Asp Pro Leu Gly Leu Pro Asp Arg Pro Phe Tyr Arg
 675 680 685
 His Val Ile Tyr Ala Pro Ser Ser His Asn Lys Tyr Ala Gly Glu Ser
 690 695 700
 Phe Pro Gly Ile Tyr Asp Ala Leu Phe Asp Ile Glu Ser Lys Val Asp
 705 710 715 720
 Pro Ser Lys Ala Trp Gly Glu Val Lys Arg Gln Ile Tyr Val Ala Ala
 725 730 735
 Phe Thr Val Glu Ala Ala Ala Glu Thr Leu Ser Glu Val Ala
 740 745 750

<210> 474
 <211> 386
 <212> PRT
 <213> Homo sapiens

<400> 474
 Met Arg Ala Ala Pro Leu Leu Leu Ala Arg Ala Ala Ser Leu Ser Leu
 5 10 15
 Gly Phe Leu Phe Leu Leu Phe Phe Trp Leu Asp Arg Ser Val Leu Ala
 20 25 30
 Lys Glu Leu Lys Phe Val Thr Leu Val Phe Arg His Gly Asp Arg Ser
 35 40 45
 Pro Ile Asp Thr Phe Pro Thr Asp Pro Ile Lys Glu Ser Ser Trp Pro
 50 55 60
 Gln Gly Phe Gly Gln Leu Thr Gln Leu Gly Met Glu Gln His Tyr Glu
 65 70 75 80
 Leu Gly Glu Tyr Ile Arg Lys Arg Tyr Arg Lys Phe Leu Asn Glu Ser
 85 90 95
 Tyr Lys His Glu Gln Val Tyr Ile Arg Ser Thr Asp Val Asp Arg Thr
 100 105 110
 Leu Met Ser Ala Met Thr Asn Leu Ala Ala Leu Phe Pro Pro Glu Gly
 115 120 125
 Val Ser Ile Trp Asn Pro Ile Leu Leu Trp Gln Pro Ile Pro Val His

153

130					135					140					
Thr	Val	Pro	Leu	Ser	Glu	Asp	Gln	Leu	Leu	Tyr	Leu	Pro	Phe	Arg	Asn
145					150					155					160
Cys	Pro	Arg	Phe	Gln	Glu	Leu	Glu	Ser	Glu	Thr	Leu	Lys	Ser	Glu	Glu
				165					170					175	
Phe	Gln	Lys	Arg	Leu	His	Pro	Tyr	Lys	Asp	Phe	Ile	Ala	Thr	Leu	Gly
			180					185					190		
Lys	Leu	Ser	Gly	Leu	His	Gly	Gln	Asp	Leu	Phe	Gly	Ile	Trp	Ser	Lys
		195					200					205			
Val	Tyr	Asp	Pro	Leu	Tyr	Cys	Glu	Ser	Val	His	Asn	Phe	Thr	Leu	Pro
	210					215					220				
Ser	Trp	Ala	Thr	Glu	Asp	Thr	Met	Thr	Lys	Leu	Arg	Glu	Leu	Ser	Glu
225					230					235					240
Leu	Ser	Leu	Leu	Ser	Leu	Tyr	Gly	Ile	His	Lys	Gln	Lys	Glu	Lys	Ser
				245					250					255	
Arg	Leu	Gln	Gly	Gly	Val	Leu	Val	Asn	Glu	Ile	Leu	Asn	His	Met	Lys
			260					265					270		
Arg	Ala	Thr	Gln	Ile	Pro	Ser	Tyr	Lys	Lys	Leu	Ile	Met	Tyr	Ser	Ala
		275					280					285			
His	Asp	Thr	Thr	Val	Ser	Gly	Leu	Gln	Met	Ala	Leu	Asp	Val	Tyr	Asn
	290					295					300				
Gly	Leu	Leu	Pro	Pro	Tyr	Ala	Ser	Cys	His	Leu	Thr	Glu	Leu	Tyr	Phe
305					310					315					320
Glu	Lys	Gly	Glu	Tyr	Phe	Val	Glu	Met	Tyr	Tyr	Arg	Asn	Glu	Thr	Gln
				325					330					335	
His	Glu	Pro	Tyr	Pro	Leu	Met	Leu	Pro	Gly	Cys	Ser	Pro	Ser	Cys	Pro
			340					345					350		
Leu	Glu	Arg	Phe	Ala	Glu	Leu	Val	Gly	Pro	Val	Ile	Pro	Gln	Asp	Trp
		355					360					365			
Ser	Thr	Glu	Cys	Met	Thr	Thr	Asn	Ser	His	Gln	Gly	Thr	Glu	Asp	Ser
	370					375					380				
Thr	Asp														
385															
<210> 475															
<211> 261															
<212> PRT															
<213> Homo sapiens															
<400> 475															
Met	Trp	Val	Pro	Val	Val	Phe	Leu	Thr	Leu	Ser	Val	Thr	Trp	Ile	Gly
				5					10					15	
Ala	Ala	Pro	L	u	Ile	Leu	Ser	Arg	Ile	Val	Gly	Gly	Trp	Glu	Cys
			20						25					30	

155

Val Ala Ser Arg Gly Arg Ala Val Cys Gly Gly Val Leu Val His Pro
 50 55 60
 Gln Trp Val Leu Thr Ala Ala His Cys Ile Arg Asn Lys Ser Val Ile
 65 70 75 80
 Leu Leu Gly Arg His Ser Leu Phe His Pro Glu Asp Thr Gly Gln Val
 85 90 95
 Phe Gln Val Ser His Ser Phe Pro His Pro Leu Tyr Asp Met Ser Leu
 100 105 110
 Leu Lys Asn Arg Phe Leu Arg Pro Gly Asp Asp Ser Ser His Asp Leu
 115 120 125
 Met Leu Leu Arg Leu Ser Glu Pro Ala Glu Leu Thr Asp Ala Val Lys
 130 135 140
 Val Met Asp Leu Pro Thr Gln Glu Pro Ala Leu Gly Thr Thr Cys Tyr
 145 150 155 160
 Ala Ser Gly Trp Gly Ser Ile Glu Pro Glu Glu Phe Leu Thr Pro Lys
 165 170 175
 Lys Leu Gln Cys Val Asp Leu His Val Ile Ser Asn Asp Val Cys Ala
 180 185 190
 Gln Val His Pro Gln Lys Val Thr Lys Phe Met Leu Cys Ala Gly Arg
 195 200 205
 Trp Thr Gly Gly Lys Ser Thr Cys Ser Gly Asp Ser Gly Gly Pro Leu
 210 215 220
 Val Cys Asn Gly Val Leu Gln Gly Ile Thr Ser Trp Gly Ser Glu Pro
 225 230 235 240
 Cys Ala Leu Pro Glu Arg Pro Ser Leu Tyr Thr Lys Val Val His Tyr
 245 250 255
 Arg Lys Trp Ile Lys Asp Thr Ile Val Ala Asn Pro Gly Ser Met Ala
 260 265 270
 Thr Ala Gly Asn Pro Trp Gly Trp Phe Leu Gly Tyr Leu Ile Leu Gly
 275 280 285
 Val Ala Gly Ser Leu Val Ser Gly Ser Cys Ser Gln Ile Ile Asn Gly
 290 295 300
 Glu Asp Cys Ser Pro His Ser Gln Pro Trp Gln Ala Ala Leu Val Met
 305 310 315 320
 Glu Asn Glu Leu Phe Cys Ser Gly Val Leu Val His Pro Gln Trp Val
 325 330 335
 Leu Ser Ala Ala His Cys Phe Gln Asn Ser Tyr Thr Ile Gly Leu Gly
 340 345 350
 Leu His S r Leu Glu Ala Asp Gln Glu Pro Gly Ser Gln Met Val Glu
 355 360 365
 Ala S r Leu Ser Val Arg His Pro Glu Tyr Asn Arg Pro Leu L u Ala
 370 375 380

156

Asn Asp Leu Met Leu Ile Lys Leu Asp Glu Ser Val Ser Glu Ser Asp
 385 390 395 400
 Thr Ile Arg Ser Ile Ser Ile Ala Ser Gln Cys Pro Thr Ala Gly Asn
 405 410 415
 Ser Cys Leu Val Ser Gly Trp Gly Leu Leu Ala Asn Gly Arg Met Pro
 420 425 430
 Thr Val Leu Gln Cys Val Asn Val Ser Val Val Ser Glu Glu Val Cys
 435 440 445
 Ser Lys Leu Tyr Asp Pro Leu Tyr His Pro Ser Met Phe Cys Ala Gly
 450 455 460
 Gly Gly Gln Asp Gln Lys Asp Ser Cys Asn Gly Asp Ser Gly Gly Pro
 465 470 475 480
 Leu Ile Cys Asn Gly Tyr Leu Gln Gly Leu Val Ser Phe Gly Lys Ala
 485 490 495
 Pro Cys Gly Gln Val Gly Val Pro Gly Val Tyr Thr Asn Leu Cys Lys
 500 505 510
 Phe Thr Glu Trp Ile Glu Lys Thr Val Gln Ala Ser Glu Phe Met Val
 515 520 525
 Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala Gln Leu
 530 535 540
 Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu Ala Ala
 545 550 555 560
 Gly Ile Thr Tyr Val Pro Pro Leu Leu Leu Glu Val Gly Val Glu Glu
 565 570 575
 Lys Phe Met Thr Met Val Leu Gly Ile Gly Pro Val Leu Gly Leu Val
 580 585 590
 Cys Val Pro Leu Leu Gly Ser Ala Ser Asp His Trp Arg Gly Arg Tyr
 595 600 605
 Gly Arg Arg Arg Pro Phe Ile Trp Ala Leu Ser Leu Gly Ile Leu Leu
 610 615 620
 Ser Leu Phe Leu Ile Pro Arg Ala Gly Trp Leu Ala Gly Leu Leu Cys
 625 630 635 640
 Pro Asp Pro Arg Pro Leu Glu Leu Ala Leu Leu Ile Leu Gly Val Gly
 645 650 655
 Leu Leu Asp Phe Cys Gly Gln Val Cys Phe Thr Pro Leu Glu Ala Leu
 660 665 670
 Leu Ser Asp Leu Phe Arg Asp Pro Asp His Cys Arg Gln Ala Tyr Ser
 675 680 685
 Val Tyr Ala Phe Met Il Ser Leu Gly Gly Cys Leu Gly Tyr Leu Leu
 690 695 700
 Pro Ala Ile Asp Trp Asp Thr Ser Ala Leu Ala Pro Tyr Leu Gly Thr

157

705	710	715	720
Gln Glu Glu Cys Leu Phe Gly Leu Leu Thr Leu Ile Phe Leu Thr Cys			
725		730	735
Val Ala Ala Thr Leu Leu Val Ala Glu Glu Ala Ala Leu Gly Pro Thr			
740		745	750
Glu Pro Ala Glu Gly Leu Ser Ala Pro Ser Leu Ser Pro His Cys Cys			
755		760	765
Pro Cys Arg Ala Arg Leu Ala Phe Arg Asn Leu Gly Ala Leu Leu Pro			
770		775	780
Arg Leu His Gln Leu Cys Cys Arg Met Pro Arg Thr Leu Arg Arg Leu			
785		790	800
Phe Val Ala Glu Leu Cys Ser Trp Met Ala Leu Met Thr Phe Thr Leu			
805		810	815
Phe Tyr Thr Asp Phe Val Gly Glu Gly Leu Tyr Gln Gly Val Pro Arg			
820		825	830
Ala Glu Pro Gly Thr Glu Ala Arg Arg His Tyr Asp Glu Gly Val Arg			
835		840	845
Met Gly Ser Leu Gly Leu Phe Leu Gln Cys Ala Ile Ser Leu Val Phe			
850		855	860
Ser Leu Val Met Asp Arg Leu Val Gln Arg Phe Gly Thr Arg Ala Val			
865		870	880
Tyr Leu Ala Ser Val Ala Ala Phe Pro Val Ala Ala Gly Ala Thr Cys			
885		890	895
Leu Ser His Ser Val Ala Val Val Thr Ala Ser Ala Ala Leu Thr Gly			
900		905	910
Phe Thr Phe Ser Ala Leu Gln Ile Leu Pro Tyr Thr Leu Ala Ser Leu			
915		920	925
Tyr His Arg Glu Lys Gln Val Phe Leu Pro Lys Tyr Arg Gly Asp Thr			
930		935	940
Gly Gly Ala Ser Ser Glu Asp Ser Leu Met Thr Ser Phe Leu Pro Gly			
945		950	955
Pro Lys Pro Gly Ala Pro Phe Pro Asn Gly His Val Gly Ala Gly Gly			
965		970	975
Ser Gly Leu Leu Pro Pro Pro Pro Ala Leu Cys Gly Ala Ser Ala Cys			
980		985	990
Asp Val Ser Val Arg Val Val Val Gly Glu Pro Thr Glu Ala Arg Val			
995		1000	1005
Val Pro Gly Arg Gly Ile Cys Leu Asp Leu Ala Ile Leu Asp Ser Ala			
1010		1015	1020
Phe Leu Leu S r Gln Val Ala Pro Ser Leu Phe Met Gly Ser Ile Val			
1025		1030	1035
			1040

158

Gln Leu Ser Gln Ser Val Thr Ala Tyr Met Val Ser Ala Ala Gly Leu
1045 1050 1055

Gly Leu Val Ala Ile Tyr Phe Ala Thr Gln Val Val Phe Asp Lys Ser
1060 1065 1070

Asp Leu Ala Lys Tyr Ser Ala
1075